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THE DENTAL REVIEW.

DEVOTED TO THE ADVANCEMENT OF
DENTAL SCIENCE.

EDITOR;

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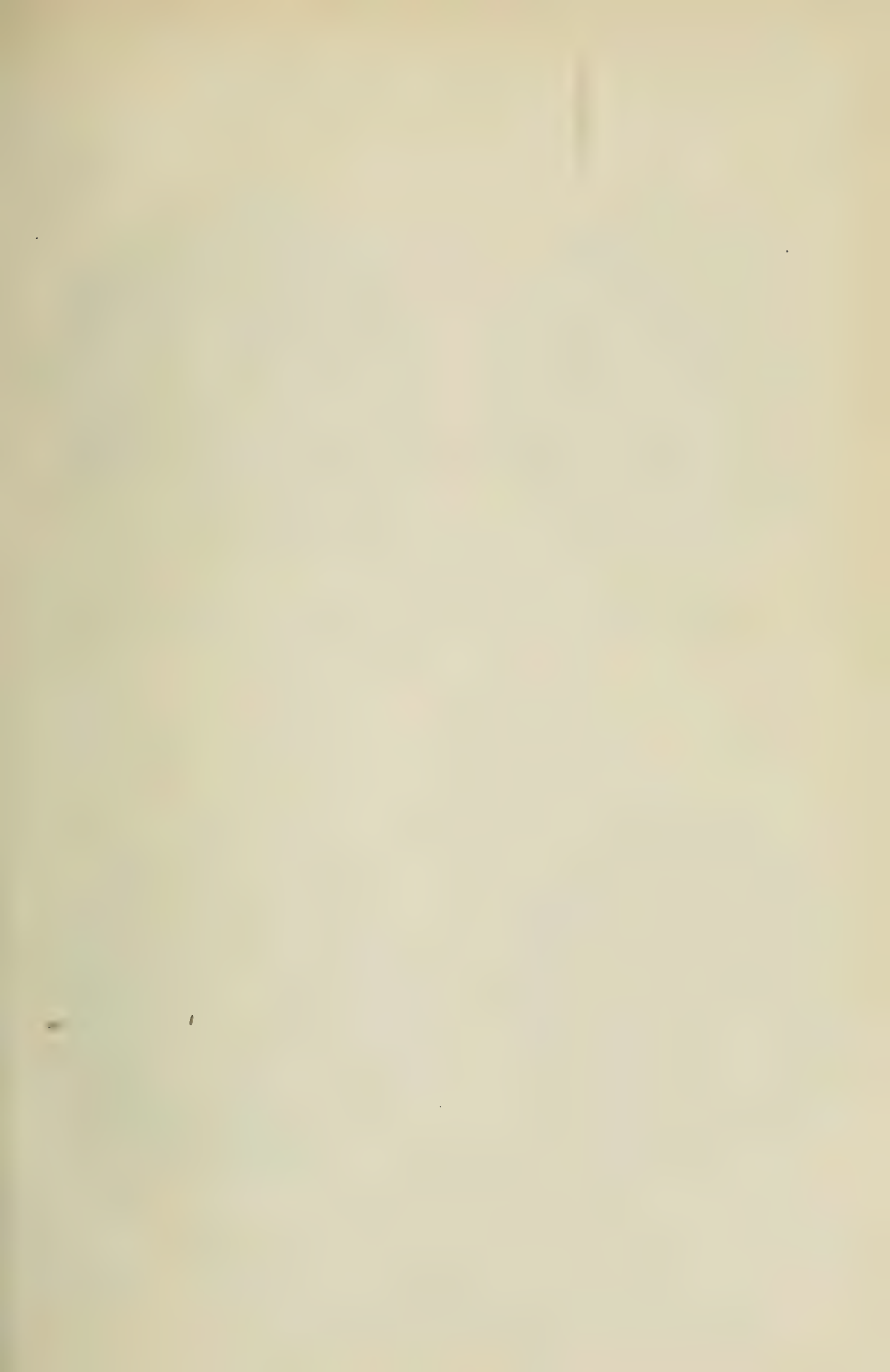


PLATE I.

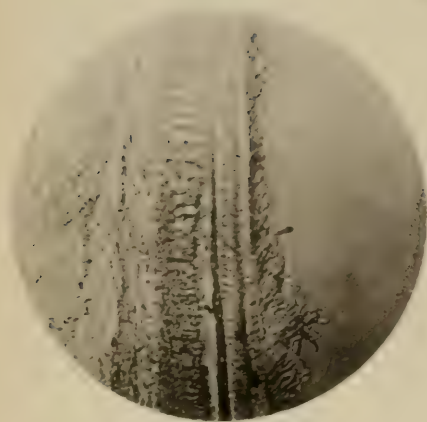


Fig. 1.—Forming Dentine in contact with Enamel. 1/6 inch.

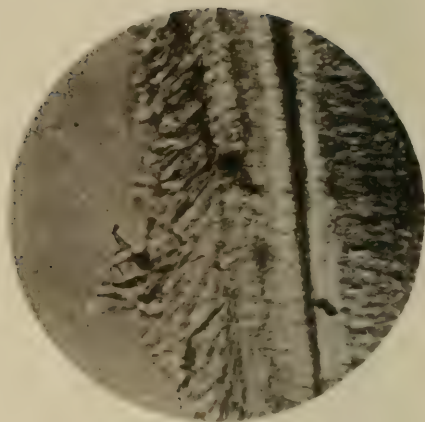


Fig. 2.—Forming Dentine with columnar cells (odontoblasts) attached "Nerve" dissected away. 1/15 horizontal mm.

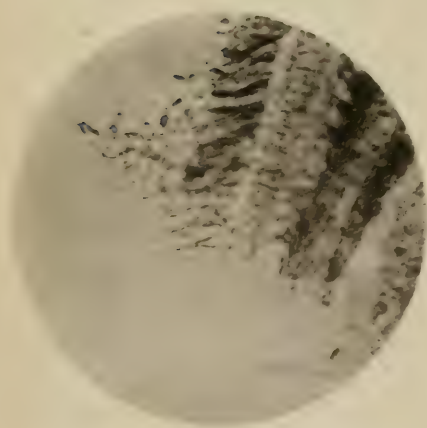


Fig. 3.—Odontoblasts attached to Dentine. A portion of "Nerve" attached to odontoblasts. 1/15 Glycerine mm.

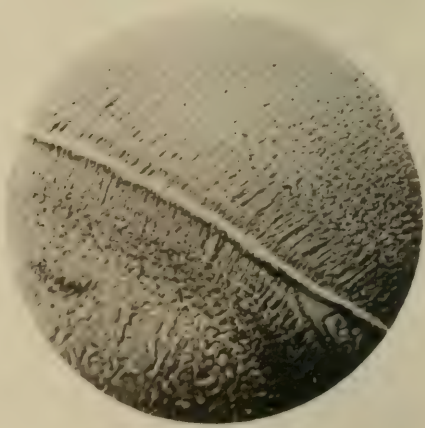
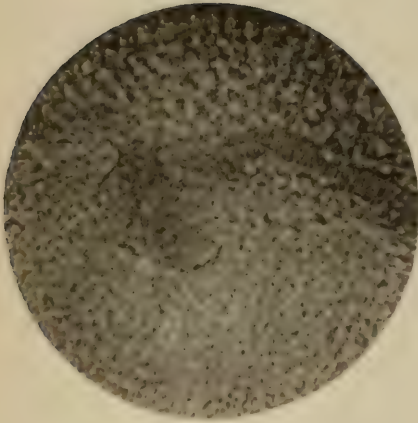


Fig. 4.—1/6 inch.

PLATE II.



*Fig. 5.—Trans Sec. Embryonal Jute.
1/15 hom im.*

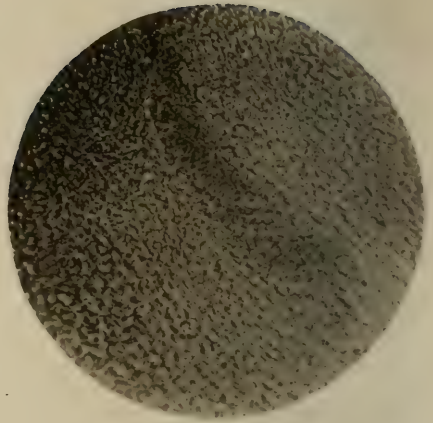


Fig. 6.—1/6 inch.

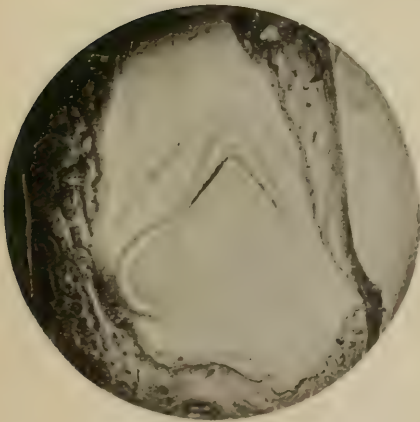
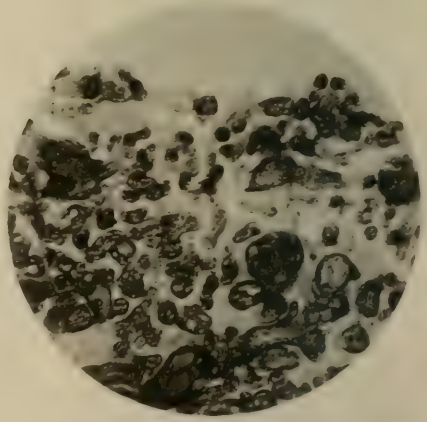


Fig. 7.—1 inch.



*Fig. 8.—Embryonal tissue developing
into adult tissue. 1 inch.*

THE DENTAL REVIEW.

VOL. VI.

CHICAGO, JANUARY 15, 1892.

No. 1.

ORIGINAL COMMUNICATIONS.

ENAMEL, DENTINE AND "NERVE."*

By G. H. McCausey, Janesville, Wis.

It is not my intention to treat the subjects of the enamel, dentine and "nerve" of the tooth from a standpoint of embryology purely, but to consider them histologically at different periods of their development. We will, to a certain extent, watch the development of both enamel and dentine and at the same time consider the function of that tissue which we have for so long a time been calling the "nerve" of a tooth. In preparing this short paper I have felt disposed to call each tissue under consideration by its right name, at the same time making the effort to ascertain so far as possible what the correct term may be by which it should be characterized.

The microscopical anatomy of a tissue often determines its kind and function. For instance, we recognize voluntary muscle by the transverse striæ of its fibers, while at the same time we recognize the tissue of involuntary muscle by an absence of the transverse striæ and by the presence of that clear appearance which distinguishes the connective tissue fibers.

From a histological point of view, we distinguish in osseous tissue the matrix as well as the bone corpuscle which represents the formerly existent osteoblast or bone forming cell.

In a like manner we may study the different varieties of tissue entering into the structure of the teeth of mammals. The more dense portions of mammalian tooth consists of three anatomical divisions, viz: The enamel, the dentine and the cementum.

*Read before the Wisconsin State Dental Society.

The enamel is that portion of the tooth which forms a covering and at the same time a protection for the coronal portion of the dentine, while the cementum covers that portion of the dentine included in the root. The enamel is the hardest structure met with in the human body. It consists of a series of many sided columns or prisms, and which stand, as a rule, at right angles to the dentine which the enamel covers. The prisms may however, at times be found decussating like the fibrous elements of connective tissues and they may nearly always be found formed into a number of sections each separated by intervening organic substance.

The acid treatment to which the adult tooth is necessarily submitted preparatory to making their sections for study with the microscope, renders it impossible to study the enamel as it is always destroyed by the acid. It may however be prepared for study by grinding in thin plates, yet they are generally made of dried specimens which are useless for study as normal specimens.

The better plan is to use specimens in process of development, and which have not been subjected to either the mineral acids or alcohol.

I now exhibit a specimen, No. 1, showing the enamel rods as they appear during the process of development, and as they will appear when calcified. It shows also the forming dentine in contact with the enamel. It will be noticed that the portion of each forming enamel rod is more dense than further away from the dentine. It indicates for each rod a greater degree of calcification, than where it appears lighter, and yet further away may be distinguished the formed matrix. Dissection of the forming rods from the surface of the dentine would demonstrate the hexagonal form of many of them.

The developed dentine of the tooth, consists like bone of a calcified glue forming matrix; but unlike bone contains no bone corpuscles, and is possessed of much greater density than is bone and is pierced by numerous passages which pursue a general direction perpendicular to the surface. These passages contain fibrils which are apparently protoplasmic processes of certain columnar shaped cells which envelop that organ, which we have for so many years been in the habit of calling the "nerve" of the tooth.

No. 2. We now have before us a specimen showing the forming dentine, and which shows the fibrils with the columnar cells

attached, but with the nerve dissected away. As in the case of the forming enamel there is a difference in the degree of development of different territories of the forming dentine. That portion in immediate contact with the formed enamel shows the greatest degree of calcification. That next in contact shows a less degree of calcification while that in contact with the columnar cells of the nerve represents the formed matrix. It will be noticed that the columnar cells differ somewhat in their form. The fact has been the occasion for claims on the part of certain histologists, that the form of the cell determines its function. For instance that the pear-shaped cell serves to calcify the matrix of the dentine formed by the cell attached squarely to the forming matrix, but possessing from one to six processes which penetrate the dentine No. 3.

We now have before us a specimen similar to the previous one, save that there remains attached to the columnar cells a certain portion which we yet persist in calling the nerve.

No. 4 is a slide showing the forming enamel and dentine in immediate contact, and the tissue of the "nerve" in contact with the formative cells of the dentine, and showing at the same time the enamel forming cells. Up to the present time we have patiently referred to that tissue occupying a position within the forming dentine as the "nerve." We will now make an effort to ascertain if we have a right to continue to use the term.

To ascertain our rights in the premises we will be obliged to return to a very early period in the development of the tooth. A period soon after the forty-fifth day of intra-uterine life.

No. 5. This slide represents a transverse section of an embryonal jaw at that period. It will be noticed that the tissue represents nothing which we have before shown, and shows the presence of two varieties of tissue. The upper portion shows the development of the epithelium or integument of the jaw at a period soon after the forty-fifth day. It will be noticed that a portion of the epithelium is projecting downward in the form of a V into the embryonal tissue of the jaw.

No. 6 represents the downward projection of the epithelium only at a later date. It will be seen that it has progressed farther, and and after a time it will be noticed that a bulb-shaped body will rise out of the sub-epithelial tissue of the jaw and occupy a position beneath it.

That portion projecting downward is to become the enamel

forming organ, and a bulb-shaped body growing in a direction upward finally exerts such a pressure against the forming enamel organ that it finally becomes surrounded by it, and itself becomes the organ of dentinal formation. In slide No. 7 we see it engaged in the formation of dentine, and although photographed with a lens of low power, it serves admirably to show the function of the bulb arising from the sub-epithelial portion of the jaw, and which is that of dentinal formation. An examination by high powers of the microscope shows it to consist of that variety of tissue which constitutes the embryonal jaw. At first it contains within itself veins and capillaries for the purpose of furnishing nutrition for the developing tissues, and at a later date it contains within itself medullated nerve fibers, and branches of which have their terminus near the dentinal forming cells as non-medullated nerve fibers. We can only conclude that while it contains nerves, it is not a nerve because it does not itself consist of nerve tissue, but is a modified form of embryonal tissue, a characteristic specimen of which is seen in No. 8.

THE ESTIMATION OF THE PROFESSION BY THE PUBLIC.*

BY C. N. JOHNSON, L. D. S., D. D. S., CHICAGO, ILL.

The President's address a year ago dealt so earnestly and forcibly with the workings of this society, and pointed out so plainly its needs that our members were aroused to renewed effort resulting in an awakening which has made the year a successful one. It therefore remains for me to make little suggestion as to change during the coming year. One feature, however, I think needs reforming, and to that I shall briefly call your attention.

I refer to the reluctance with which many of our members give their consent to prepare papers for the society. The programme committee invariably have a difficult task to secure essayists for the coming year unless they go to those whose known loyalty to the society prevents them from ever declining. Thus it is that we often see year after year nearly the same names occurring on the programme, and this fact of itself has often led to censure of the committee and to a charge of favoritism in the selection of essayists. I wish here to emphasize the fact that it is not so much a desire of the committee to have the same names continually appearing as it

* President's Annual Address, Chicago Dental Society, April, 1891.

is the necessity which forces them to approach men who will accept, by the persistent excuses and declinations of a large majority of our members.

Every man owes it to his society to do something toward its progress, and it is safe to say that in an organization like ours there are very few who are deterred from a duty like this through lack of ability. We are always disposed to admire modesty in a man, and yet even so great a virtue as modesty should not be encouraged to the point of proving a drawback to the best interests of the society. We trust that future committees will meet with more encouragement than those in the past, and we also hope that future presidents will have less trouble in obtaining men to act on these committees.

One word more in this connection. When a member gives his consent to read a paper he should look upon the matter as an obligation not easily to be set aside. He owes it to the committee, to the officer of the society, and to the society itself that he makes good his promise. It is a matter of much inconvenience to the Secretary to receive from a member who is expected to read a paper at the next meeting, a note simply stating that it will be impossible to be on hand and sometimes coupling an excuse which nine times out of ten only serves to prove how lightly he holds his pledge given to the committee. The essayist always has from one to twelve months' notice of the time he is expected to appear and there is seldom any excuse which will warrant his failure. He should hold himself personally responsible for the entertainment of the society on the night for which his paper is set, and if from any cause he is unable to be present he should prepare his paper in advance and place it in the hands of the Secretary or some friend whose confidence he can claim to properly present it. If this were done it would prove his good will, and from past experience in these matters we feel sure it would be appreciated by the society and more especially by the Secretary on whose hands falls the burden of procuring a substitute.

It is exceedingly embarrassing for the Secretary to be obliged to impose on the good nature of some of our members and solicit a paper at the last moment on account of the negligence of a delinquent. In common justice to the society it is only reasonable to expect of a man whose name is on the programme that in case of a failure on his part to prepare a paper, he will himself provide a sub-

stitute and relieve the Secretary of a service which does not rightfully belong to him.

It is probably more often thoughtlessness and carelessness than willful neglect which leads to this wrong, and it is hoped that now since attention has been called to it we will have fewer delinquents than in the past. Your retiring President bespeaks for the coming year a most successful era in the history of the society.

The subject selected for our brief consideration this evening is

THE ESTIMATION OF THE PROFESSION BY THE PUBLIC.

The question must often arise in the minds of the thinking men of the profession whether or not we are appreciated by the public in due relation to the amount of good we are doing in the world? A professional man is usually supposed to have some prestige in society not ordinarily accorded those in humbler walks of life. The lawyer and the clergyman for instance are better received—other things being equal—than the mere mechanic. No reflection is meant in this connection on the mechanic. He may be a man as proficient in his way as the professional man and yet the world has grown to expect a higher development of intellect from the latter, and treats him with the increased respect which advanced intelligence demands.

Now the question arises: Do dentists, as a class, stand upon the footing of professional men when judged by the estimate which the world places upon them? In our limited way we do as much good to humanity as any of the other professions. We relieve human suffering, and we add our share to the sum of human happiness. But we have not yet succeeded in gaining from the world that kind of recognition which places us on an equality with the learned professions. Reference is not here intended to individual members of the profession. It is freely admitted—and with pride—that individuals practicing dentistry have been honored by the world and have been looked upon as worthy of a name beside the greatest, and yet the few who have claimed distinction in this way only demonstrate more forcibly the fact that the rank and file of the profession are considered lacking in those qualities which demand recognition.

We cannot any longer content ourselves with accounting for this by the extreme youth of our profession. When a profession increases to the extent that it has between 18,000 and 20,000 mem-

bers in a single country it has reached a point where it can no longer shirk responsibility with the claim of minority. We have been long enough in the field now to have made an impression on the world, and it is time we began to examine ourselves for the cause of our present condition. Let us see if the fault does not lie within our own ranks.

It is generally supposed to be a requirement of a member of a learned profession that he shall be possessed of learning. We are not quite sure that members of other professions invariably fulfill this requirement. In fact it is probable that many of them do not, but when it comes to dentistry there cannot be the shadow of a doubt that a very large per cent of the profession are utterly devoid of the first principles qualifying an individual to recognition as being learned.

Dentists may be skilled in manipulative measures, but they are not as a class well developed mentally. By this we mean that they do not take as comprehensive a view of life and its possibilities as they should. They dedicate themselves heart and hand to the dental rut, and they ignore the fact that there is anything outside of that rut worthy of serious consideration.

It is well to be devoted to one's profession, it is perfectly proper that it should be the mainspring of one's best endeavor, but to confine oneself constantly to the environments of a profession like dentistry where strict attention must be paid to the minutiae where the little things are the things which count, where a broad, comprehensive grasp of the great questions agitating the mass of humanity is seldom called for, will in time produce in the individual a narrow, illiberal spirit which influences him in his intercourse with the world. He cannot avoid making an impression on those he meets as a narrow-minded man. His mental vision is limited, and he sees nothing on either side of the restricted groove into which his destiny has placed him.

When we as dentists are called upon to encounter the world in any capacity outside of that related to the profession, we make an indifferent showing. We are at sea on questions of national or international importance. We cannot for a moment speak intelligently on the trade relations between our own and other countries. We apparently ignore the import of the wonderful advances made in the industrial world around us. We fail to keep properly in touch with the revolution of thought and theory which forms the most distinctive feature of our age.

And what must be the estimate placed upon us by the world when these facts are so manifest? I am willing to admit that to follow the practice of dentistry so closely, as most of us are obliged to do in order to obtain a livelihood, precludes the possibility of looking deeply into the questions just enumerated. For instance, the associations of a man absorbed in filling teeth are not favorable to a close study of the great railway interests of the country. There is little in common between a pulp canal and politics (unless they are both putrescent) and we may not hope that a man whose mind is occupied with the study of erosion can successfully cope with a question such as that of the fisheries dispute between the United States and England. But dentists should at least know enough of these matters to be able to discuss them intelligently, if not deeply. They should show the world that they are readers and thinkers, and not mere mechanics.

And even if we give over entirely the consideration of questions such as I have just mentioned, if we feel inadequate to follow the workings of the political and industrial worlds, we have yet before us another world which, if developed by us as a profession, will give us standing beside the culture and learning of our generation. It is one not at all incompatible with our calling as dentists, and one which is as broadening in its influence as its possibilities are unlimited. I refer to the literary world. The study of the best literature inspires, broadens and ennobles a man as nothing else will. If we are properly equipped with a knowledge of the literature of the world we need not fear to pull a conversational oar with the best men we meet. We may hold up our heads and assume a place in the community fitting the members of what would then be a learned profession. And this development of the literary taste is within the reach of all dentists who have in them the elements of progressive men. There is little monetary expense attached to the accumulation of this kind of knowledge, and the poor dentist may advance as rapidly as the rich. It is not necessary to neglect the duties of practice, and in truth these duties are rendered less monotonous and irksome by the diversion which comes from a well-balanced brain filled with something to think about. An evening with some of our best authors is conducive to rest and sleep, and the reflections and inspirations resulting from the discovery of a new thought or a beautiful sentiment from some great poem sends a man to his office the next morning refreshed in mind and spirit.

He has something to think about other than the petty failures and vexations of his daily practice, and he is more in the mood to impress favorably those he meets than if he had idled away his time or spent it fruitlessly in the endeavor to hold a better hand than his opponent in a game of draw.

The truth is becoming more and more apparent that if we are to gain a reputation as broad and liberal men we must do it by virtue of development in lines other than those strictly relating to the practice of our profession. We must get outside the dental rut occasionally and in doing so we shall not only broaden our perceptions of life in general, but we shall be better equipped to view our own profession from every side and raise its standard more rapidly than if we confine ourselves at all times to the details demanded by our every day experience.

As it is to-day we are controlled altogether too much by the little things. We are pleased by trifles, and what is worse yet, we are annoyed by trifles. Ignorance is our greatest enemy, and the world cannot be expected to look with respect upon a profession which contains within its ranks so many men who are lacking in the elements of ordinary education. In this connection I wish to emphasize the fact that unless we exercise more care in the future than we have in the past in discriminating between educated and ignorant men who apply for admission to the profession, we shall advance very slowly in the estimation of the world. We must seek not only to elevate the men who are in the profession, but to keep out men who are not fitted to do it credit.

But for ourselves I am convinced that there is no other one element which will work so favorably toward making us more expansive and receptive, no other influence so well calculated to improve our mental caliber and place us in a position where we may advance our reputation before the world, no other diverting pursuit so congenial and convenient for us as dentists, as the consideration and study of the various phases of human thought and experience which comes under the general head of literature.

MATRICULATE EXAMINATIONS OF DENTAL STUDENTS.*

BY EDMUND NOYES, D. D. S., CHICAGO, ILL.

Will the time ever come when dentistry will be entitled to rank as one of the "learned professions?" Will the large majority of

* Read before the Chicago Dental Society.

the dental profession at some time in the future deserve to be characterized as well educated or liberally educated men? If we may hope for such a condition of things, what are the forces and motives in operation to produce that result and what efforts are necessary on the part of the profession and the colleges to accomplish it or to hasten it? The surest ground of confidence that the future will be better than the past in some of these respects is in the general tendency of this age and generation toward a better education of young people in the schools and a longer and more careful special training for the work of life. Dentistry is beginning to feel the benefit of this general impulse, and will do so more in the future, probably, though it seems to me that for some reason, which I cannot understand, it does not yet feel this progressive movement to so great a degree as some other occupations. I mean that the boys appear to me to be more willing to patiently complete a high school or manual training school course of four years and then, perhaps, add two or four years in colleges or schools of technology, if they intend to be architects, engineers, chemists, electricians, lawyers, doctors, journalists or clergymen, than if they intend to be dentists. Whether or not this supposition is correct it is evident enough that very few of the boys applying for matriculation in the dental colleges have had anything that can possibly be called a liberal education, and very few, indeed, of the boys who are obtaining a collegiate education have any intention of studying dentistry afterward. I shall not spend much time to argue the desirability of a better educated class of men, for though there are instances of college graduates who appear less intelligent, show less vigor and breadth of understanding and less ability and success every way than numerous others who had very indifferent advantages in their youth, I judge it to be evident enough that the *average* standing, ability, influence and professional success and usefulness of men well educated previous to their professional studies are abundant compensation for the time and expense required to educate the boys.

What can be done to raise the standard of qualifications for entrance to the dental colleges? From the public little can be expected directly, though the general tendencies and influences operating in most communities, which have been referred to, are likely to be important in the end. Much ought to be done by the profession generally. Boys who are thinking of studying den-

tistry are apt to consult the dentists of their acquaintance, and though they may think that they do not need any more schooling than those who have preceded them, and though many dentists may feel inclined to advise that what has answered for them will answer for a new generation, the most of those in practice should appreciate the importance of their calling and the limitations caused by their own deficiencies, with sufficient clearness to cause them to urge the best attainable education upon all young men who consult them with reference to a preparation for entrance to dental colleges. This is where work is most needed, and though it must be done quietly, and without system or organization, by the power of individual influence and opinion, it ought to be so constant and universal as to prove very effective in time.

That the colleges have an important work to do in this regard is apparent enough to everybody, and they should be made to feel such a wise and constant pressure from the profession as will induce them to make steady progress toward the most desirable standard. Advancement must be slow, for the colleges must have students and the profession must have recruits. If the standard were raised at once to what we should like to have it, a very large proportion of those who are now applying would be rejected. All we can expect is that the requirements may be made stringent enough to weed out the most undesirable, and be advanced as rapidly as the attainments of the better class of applicants will permit. It is to be feared that hitherto a great many of the colleges have allowed very few to escape them, whether well or ill qualified.

The Association of Dental College Faculties requires, in the absence of diplomas from high schools or colleges, or teachers' certificates, a preliminary examination the requirements of which include a good English education. This is perhaps rather indefinite, and as interpreted by many of the colleges appears to mean no more than could be successfully attempted by ordinary bright boys of fourteen or fifteen at the time they leave the public grammar schools to enter the high school. Some of the colleges have announced a little higher standard than this, equivalent to, possibly, one year's work in a high school or academy having fairly good entrance requirements. One of them has announced that its standard will be raised after next July, when what appears to be a little more than one year of high school work will be required.

Now if by a liberal education, we mean a college course with

its degree of bachelor of arts, or science, it is evident enough that we are not in sight of the time when we can hope to have a liberally educated profession. We are not even near enough to conjecture whether the progress and developments of the future will be toward that end, or upon other lines, perhaps more closely specialized to our requirements.

Much has been done to improve the quality and duration of professional teaching, and we are just entering upon the new plan of requiring three years of college work instead of two years in college and one year of uncertain and easily evaded work in a dental office, and there is a resolution pending before the Association of Faculties to require four years of study, including three winter courses of lectures. Would it not be better now to wait awhile before increasing the length of time required for professional studies and devote ourselves to efforts for improvement in the quality of the teaching in our three years course, and especially to an effort to lengthen the time spent in high school or college before matriculation. Are the profession, and a few of the best colleges, ready for a positive step in advance at this point, which has made little or no progress for twenty-five years?

If it is conceded as desirable that our profession should be composed of fairly well educated men, generally as well as professionally, it must be admitted as more necessary that boys should have well trained minds, studious habits and a fair amount of general information such as is obtained in school, before entering upon professional studies, than is the case with most other professions, for the reason that the daily practice of dentistry does not necessarily require nor tend to promote studious habits as is the case with the practice of medicine, law, or journalism, or teaching of any sort. Professional studies have so definite an object, and the attention is so constantly and closely fixed upon the goal to be reached that the enjoyment of study and investigation is not usually great enough to insure the continuance of studious habits very much after graduation, while in other professions the necessities of successful practice more surely compel it. It is necessary therefore that the foundation be laid, the impulse given, and the disposition and habit acquired before coming to the dental colleges, if we expect our men to show the studious habits and thirst for knowledge which will entitle them in middle life to be called educated men.

It is about time to begin asking that applicants for matricula-

tion shall be required to present diplomas from first class high schools, or otherwise show fitness to enter the freshman class in first-rate colleges. This would be an advance of two or three years of study over present requirements, and may be thought too much to ask at once. (Though it is to be remarked with satisfaction that a considerable number of students voluntarily take this amount of schooling now.)

It will be easier to advance to that point than to take a shorter step, because it is a standard of requirements easily defined and universally understood, and is the least that is reasonable in view of the character and requirements of the profession. In the case of all the schools connected with universities it would be practicable, and probably desirable, to relieve the dental schools entirely of the trouble and responsibility of examining students, who could be sent to the college authorities with the candidates for entrance to the freshman class. It might be necessary to allow a greater number of substitutions (a wider range of choice) than is allowed by some colleges, and to insist upon somewhat different studies as indispensable; for instance, physics and chemistry instead of an equivalent amount of Greek or the higher mathematics. Exception ought to be made in case of students more than twenty-one years of age, who ought to receive individual consideration as to whether their maturity and the particular training each may have received in some previous occupation, together with his ability and character, should be accepted as a fair equivalent for the schooling otherwise required.

Experience has shown that very many of those whose special aptitude and inclination are so strong as to induce them to leave other occupations and begin the study of dentistry rather late in life, make excellent students and successful practitioners, though it is also true that a good many of this class who wish to try dentistry because they have failed in everything else, ought to be turned away. If a boy less than twenty-one years old cannot comply with the requirements, he cannot do better than to spend the time till his majority, if necessary, in an effort to complete them.

We must not depend too much upon associations with constitutions and by-laws, for the taking of advanced positions, and enforcing their maintenance, though valuable help can be had from this source and it will all be needed, but we shall make slow and unsatisfactory progress except as we have colleges that will establish

a high standard and maintain it because they want to, and not because they are obliged to, just as all our great colleges and universities have maintained their high standard of scholarship because they desired to, taking pride in doing such thorough work as will fit their graduates for honor and usefulness, and not because of any outside compulsion.

THE IMMEDIATE AND PAINLESS EXTIRPATION OF THE DENTAL PULP.*

By JOHN C. MCCOY, D. D. S., SANTA ANA, CALIFORNIA.

Only a few of you know of my experiments relative to the subject of this paper. My first successful case was more than five years ago, and was the result of accident or necessity rather than investigation. An operation had to be finished at one sitting, and yet a living, extremely sensitive pulp must be extirpated for a nervous patient, before even the foundation of the work could be laid. After trying all ordinary heroic methods to extirpate, both the patient and myself were despairing, when I determined to try cocaine, injected. So filling my hypodermic with a ten per cent solution of cocaine I placed the point in the small exposure and rapidly forced the contents into the exposed pulp surface. Of course the patient jumped, but said the pain was only momentary. The hæmorrhage from the pulp was immediate and profuse. On examination I found the point of exposure insensible to the touch of the excavator. Enlarging the cavity I probed carefully, and to my delight I found the effect of the cocaine was complete. The entire pulp was quickly removed, and without pain to the patient. The hæmorrhage ceased after syringing the cavity with cold water. The root was dried and immediately filled, and crowned, and is doing good service to-day.

After a few days three more pulps were treated in a similar manner, with a like result. My next few cases did not terminate so successfully. The trouble was with the hæmorrhage which was copious and uncontrollable. At least I could find nothing that would check it sufficiently so that I might properly fill the root canals. After spending much valuable time in a vain effort to stop the bleeding, in each case a styptic was applied far up in the canal,

* Read at the Seventh Annual Meeting of the Southern California Odontological Society, convened in Los Angeles, California, November 19, 1891.

and the patient given another appointment. In nearly every such case pericemental inflammation supervened, and it required considerable treatment to save the tooth. So many cases were of this nature, and being unable to find a styptic that answered in all cases, I ceased to use the method except experimentally on supposed favorable cases. So it went on for years, until I found the long looked for styptic in tinct. of hamamelis or Pond's Extract. I would have published the result of my experiments sooner, but thought it wiser to wait and test it thoroughly. More than two hundred successful cases have now been treated, most of them in the past fifteen months. So much for the history, now for my present method, and I will be brief as possible.

First, a suitable case. The pulp must be exposed and the opening large enough to admit a large sized hypodermic point. The larger the exposure, the less pain you will inflict. The application to the cavity of a twenty per cent solution of cocaine in eugenol for five minutes will generally relieve most of the pain in removing the decayed dentine from the surface of the pulp.

Second, a first-class hypodermic syringe and in perfect working order, with both straight and curved points, with points cut square at the end. Not the smallest points, medium sized to large points produce best results.

Third, A wide-mouthed bottle containing a ten per cent solution of cocaine, fifty grs. to an oz. of water.

Fourth, Wide-mouthed bottle of tincture of hamamelis.

Fifth, Rubber dam being applied or napkin in place, remove all debris from the cavity, exposing the pulp as much as possible without inflicting pain. Fill the hypodermic with the solution of cocaine, place the point in the opening of the pulp cavity and steadily and rapidly force the contents of the syringe against and around the pulp. The pain, if there is any, is only for a moment. Hæmorrhage from the pulp is the best indication that the application has been efficient. In three minutes you can enlarge the opening, and if the pulp is still sensitive, repeat the dose, using only half the amount of the solution. Before attempting the removal of the pulp, the dentine around and above it should be cut away with the engine bur. You can now remove the entire pulp with slight pain and in most cases with none at all. In molars each root should be treated separately after the "pulp mass" is removed.

The *force* used in injecting the cocaine is an important factor in successfully performing the operation, and the syringe should be directed in such a way as to cause the cocaine solution to penetrate the fang as far as possible. The anæsthetic effect is temporary, but is sufficient for practical purposes. If, however, the pulp is not removed at first sitting, sensation returns in an intensified form.

When the pulp has been removed, fill the hypodermic with tincture hamamelis and force it into the pulp cavity as before. This will not only wash out the loose fragments, but will control the hæmorrhage. You may have to syringe out the cavity several times, but I have never had a case where hamamelis failed to stop the hæmorrhage immediately.

When I am satisfied that the pulp is all removed from the fangs, I syringe the same as before, then dry with absorbents and hot air (under pressure), drying thoroughly. Use no medicaments; I fill roots usually with chloro-percha and gutta-percha cones. If convenient, fill crowns at the same sitting. Every case so treated has been a success. This plan recommends itself for crown work. It is especially adapted to work on front teeth, where it is of great importance to retain the natural color. Teeth treated in this way retain a lifelike appearance and I am sure are stronger and in a better condition than when arsenical preparations are used. The proper cases on which to use the method will, of course, be left to the judgment of each operator. A little practice will enable any intelligent operator to succeed. In the use of this method you will be saved much valuable time and annoyance; and, better still, you will alleviate much pain. The teeth so treated will present a more natural appearance and the work will be more permanent. Thus you will reflect credit upon our noble and philanthropic profession.

SOME THOUGHTS ON DENTAL EDUCATION.

BY E. MAWHINNEY, D. D. S., CHICAGO, ILL.

Dental education consists, of all that series of instruction and *discipline* which enlightens the understanding, corrects and forms the manners and habits of individuals, and prepares them for the greatest possible usefulness in their future profession. The great requisite of the student before entering his professional studies is a broad, solid, true foundation upon which to raise his superstructure.

Such a foundation consists of a knowledge of the great underlying principles of all science, truth and culture.

His mind should be so drawn out to a point of self reasoning that he is able to arrive at reasonably correct conclusions and capable of ascertaining the great lessons and facts from the many conjectures, suppositions and demonstrations of advanced thinkers in general science and literature.

His finer nature should be so cultivated as to form a basis for a true, noble, well rounded character.

Upon such a foundation he may rear a structure that will be an honor to the profession and himself, and a harbor for the suffering around him and a blessing to mankind in general. Without such a foundation his future labors will almost certainly come to naught.

It is true that upon poor foundations the frame work of many structures are reared, and this even enclosed and covered with shining colors of paint which glitter and deceive many of us, but rarely ever does such a structure reach completion before the trials of professional life come and carry it away to give place to one grounded and reared upon the true principles of success, perchance here and there one may stand and make what men call a success, but that success is more caused by the ignorance of the masses around him than his own merits.

Some of the fathers of our profession began on poor foundations, but during practice they were continually repairing their beginnings. Remember that but little was required of them as compared with the demands of our day. Under the influence of our wide spread literature, the public are becoming more familiar with the achievements of our profession, and of the fact of its constant advancement, so that each succeeding year our patients demand more at our hands, and only those who keep apace with the profession can expect to gain their friendship, confidence and patronage.

A student may graduate with highest honors but if while in practice he stands still—if this were possible—or goes backward and does not continually improve, he is soon left far behind and trampled in the dust by the progressive throng. How important then the duty of colleges and instructors, of cultivating in the student this spirit of advancement.

We frequently have nongraduate practitioners complaining because they are not allowed to begin with advanced classes in our

colleges and accredited with one or two courses on account of previous practice. The reason they are not allowed this advanced standing comes out of the fact that the majority of such applicants have nearly as much to unlearn as to learn. There are however some who apply for admission who are doubtless qualified to receive advanced standing, and I regret that they cannot be so accommodated. Our colleges must have some fixed rule and past experience teaches that the present one is most certain of good results for the present at least.

It is almost impossible for an individual to enter upon a career of usefulness unless he first undergo a system of instruction and training such as is imparted by our good colleges; indeed beyond doubt, our dental schools are the best means of acquiring the desired end but that the individual can only get such instruction and discipline in our colleges is, I believe, a mistake. The idea that *only* graduates of reputable dental colleges shall be allowed to practice is too old and narrow for our time, and the principle that because I hold a diploma from a reputable college I shall be allowed to practice so long as I desire is an outrage on humanity.

It is a thorough knowledge of the advancing science and art of dentistry, skilled in the art of manipulation together with a mind and character capable of advancing as fast as does the profession, that we should desire in the practitioner and it should not matter where, when or how he reaches such attainments.

The time is coming when all who are *not* properly qualified to practice, whether in possession of a diploma or not, shall have to enter some other field of labor and give place to those that are. Because an individual was well qualified ten years ago does not prove that he is now, and in justice to the good name of the profession, as well as humanity, there should be some way of determining every few years who are qualified and who are not, and compelling those who are not to prepare themselves or leave the profession. It is pleasant to notice the *stress* many colleges are placing upon "a good moral character" as a requirement for graduation. They cannot be too strict in this regard, for without such a character few succeed. Had our colleges been more strict in this requirement during the past years we would not now be troubled and disgraced by so many unprincipled cheats and quacks.

FILLINGS.*

By O. G. BENNETT, D. D. S., JANESVILLE, WIS.

The object of filling is simply to close up a hole. Substituting a foreign substance for that which was lost. A mechanical means of restoring continuity and preventing further destruction of remaining tooth substance.

To attain results in any degree satisfactory, requires the skilled dentist who has both application and a conscience that he is operating upon living tissue, and upon organs of the human system on which health, happiness and life depends. He impresses his patients with the fact that good results do not depend on him alone, but with their coöperation. That cleanliness and correct habits are indispensable and that care and judgment must be exercised in the use of their masticating organs. The desirable patient will profit by your advice and will be a stimulus to his faithful dentist to work with higher and far better results.

It is the duty of each of us to provide ourselves with all necessary appliances, instruments and materials, and with a well ventilated, comfortable and convenient operating room where plenty of good daylight is admitted.

The necessary requisites of a filling material are indestructibility, adaptability, hardness, tenacity, nonconductibility and color.

Gold possesses the greatest number of desirable qualities and the least number of objectionable ones as a permanent filling material. As used by the dentist it is in its pure state and cannot be affected by the oral secretions to which it may be subjected. It is capable of being accurately fitted to all portions of the walls of a cavity. It can be used in the cohesive or noncohesive state or in combination, as the different cases may indicate. It is capable of being thoroughly condensed and finished, producing a filling that is slightly and serviceable, having good edge strength, tough enough and hard enough to stand any ordinary service. It is nonshrinkable and nonexpansive. Gold is a good conductor of heat and cold, which in some cases is a serious objection. This can be overcome in the majority of cases by the judicious use of a nonconducting material nearest the pulp, where it is possible to use it.

If we prepare the ordinary cavity properly, take the necessary precaution against the transmission of heat and cold, insert the

* Read before the Northern Illinois Dental Society.

gold carefully and thoroughly, and finish so that it will have no overhanging edges of gold and of such shape that will not invite the lodgment of food but be accessible to cleanse, we will not have to depend on the oxide or microbe to complete the operation.

Amalgam is made by mixing mercury with an alloy of various metals of which there is endless variety of formulas. Some of these alloys have a considerable merit and many of them none.

It requires no small amount of skill to make a good amalgam filling and no skill at all when used as far too great a number of those who bear our honorable name use it, i. e.: To plaster holes in teeth so that they can get that punched fifty cent piece in their trousers pocket and yet not be guilty of larceny under the State laws.

On account of the plastic working qualities of amalgam and the ease of its manipulation it is sometimes a desirable material to use especially in posterior teeth where the cavity is not accessible or where rubber dam cannot be adjusted so as to exclude all moisture. We may have some faith in copper amalgam in these cases. A good amalgam filling is preferable to a poor gold one, as that oxide is so handy to cover up some of the defects resulting from the use of amalgam. The cavity should be just as carefully prepared and protected as for gold, only we should remember that in gold we have the edge strength to protect the enamel margin while in amalgam the edge strength is not its equal. Therefore we should prepare the margins of cavities in accordance with this fact. For badly broken down molars and bicuspsids the serviceable crown is preferable; but we are not always permitted to do the best way, so we are compelled to do otherwise from the force of circumstances. When we do use amalgam we should use it to the best of our ability for it admits of no carelessness in its use.

The reasons for discouraging the general use of amalgam are these:—that the molecular changes undergone in the process of crystallization, the action of the various conditions of the oral secretions, and galvanic action make its results very uncertain. It is shrinkable, expansive, and has a tendency to assume the spheroidal shape and has poor edge strength. Great pains should be taken to prepare the cavity, to fill thoroughly, and after a few days finish perfectly, having a very nice looking operation. but after a few months or a year's wear we examine it and find

an unsightly filling with defective margins. It has shrunk or bulged, defeating the very object for which it was inserted.

We have in Wisconsin a few dentists, so called by their victims, and who advocate nothing but amalgam for bicuspid and molars, and even rascally insert it in the anterior teeth. They are incapable of using gold, likewise amalgam, much less are they competent to educate their patients to a better care of their dental organs, or to appreciate and pay for high grade dental services when it is simply throwing their money away, sacrificing time and patience and submitting themselves to a wrong unless they receive honest attention.

Oxyphosphate of zinc is useful and effective as a temporary filling, and also for preventing the effect of thermal changes in the pulp. It being more soluble in some mouths than in others makes it unreliable as a permanent filling. Teeth of poor structure can be made useful for an indefinite length of time by its use, if the patient is under control and understands that it must be given frequent attention.

Gutta-percha is too soft a substance for a permanent filling but makes a very good temporary stopping. Its admirable qualities are that it is a nonirritating and nonconductive substance, yet it appears to have little effect as an obtunder.

In the preparation of a cavity for filling the first step is to carefully examine it and the surrounding parts, and to adjust the rubber dam. If an approximal cavity and space is needed, secure it by separating. It may have been necessary in rare cases to have previously separated, i. e., by means of wooden wedges or rubber strips placed between the teeth several days previous to operating. In most instances this mode is very annoying to the patient and is very liable to induce periodontal inflammation, which may have a serious termination unless care and judgment be used throughout the operation. Immediate separation is preferable by use of the mechanical separator or the wedge. The former preferred where possible to use it. The separator admits of no carelessness in its use on account of its great power.

The opening of a cavity is an important step, especially in deep-seated caries.

Break down the frail walls of enamel with a keen edged chisel or some other appropriate instrument, dry, render aseptic the contents, remove the decalcified dentine with a sharp excavator. If

pulp is alive and has not previously shown inflammatory symptoms, but is nearly exposed, work very cautiously indeed. Better leave a portion of decalcified dentine than to expose pulp as we can substitute a no better protector. Dry with warm air and saturate with creosote what is advisable to leave. Cover with a thin coating of gutta-percha solution, or what is better a kind of gutta-percha film such as tailors use and which is about the thickness of ordinary writing paper. Cut a piece about the size of portion that you wish to cover. Place in cavity and spray with chloroform. It will adapt itself very nicely, then after chloroform has evaporated sufficiently, cover with oxyphosphate of zinc, avoiding all unnecessary pressure. After cement has set proceed to preparing, as any ordinary cavity.

If the pulp has previously caused trouble, we find an exposure and the patient is more than twenty-five years of age, we have reason enough to devitalize it as it will most certainly cause trouble should we try to save it.

If the patient is young and healthy and has given a favorable history of the case and we find conditions favorable, preserve if possible.

When doubts exist as to results it is best to fill with cement and let the matter remain in abeyance until satisfied that the prospects are good, then fill with a permanent filling, leaving a portion of cement as a protector.

There can be no general rule in regard to shaping a cavity. Good common sense must be the guide in every step. How much or how little to cut away cannot be written with propriety, as there are different circumstances in every case.

A knowledge of the kind and also the amount of force that both metal and tooth structure will be subjected to, the direction in which force is applied and the relative strength of metal and tooth substance is necessary.

Cut until good healthy tissue has been reached. Be suspicious of all fissures and lines terminating in margin of cavity. Leave no sharp angles, no ragged edges, but a well defined, polished margin.

Cut away no more healthy dentine than is necessary. Cut grooves and retaining points in dentine where they will do the least harm and the most good. Make all portions of cavity accessible.

The use of the matrix greatly simplifies the filling of posterior approximal cavities.

Soft gold must be used for the greater part of the filling, giving special care to cervical margin, complete with cohesive gold. Every step should be made carefully, intelligently, and with suitable instruments.

The lateral expansion of soft gold after finishing filling will be found to have given a perfect margin, and it cannot be told where the cohesive gold commenced and where the soft gold ends, so completely is the whole mass condensed.

In using gold, especially cohesive, the operator should bear in mind that it only goes where it is directed, also that pluggers are made of steel and that we should always have gold between the points and the tooth structure when force is applied, and that force does not follow the curves of corkscrew plugger points.

We should try to imitate nature in the shaping of a filling, whether it be in the central incisor or in the second molar.

Preserve the bellshaped tooth when possible. Fillings should be contoured if possible. Let no two flat surfaces come in contact with each other unless unavoidable. Finish fillings thoroughly. Leave no overhanging edges of gold. Do not cut a shoulder at cervical margin in finishing. Have cavity properly filled before dressing down to tooth structure, but do not try to dress the tooth structure down to an incomplete plug. Let me again tell you to be careful in filling and finishing at cervical margin and to have gold burnished to entire margin of cavity, having a perfect plug at the completion of the operation.

Be honest with yourselves, be honest with your patients. Profit by your failure of to-day that you may do better to-morrow.

REMARKS ON ROOT CANAL FILLING.*

BY E. R. WARNER, D. D. S., MORRISON, ILL.

The subject, "The filling of pulp canals," is an old one, yet it is one which rarely escapes, in some form or other, the programme of a dental society meeting.

As to the importance of this branch of our practice none of us will raise a question; we see it daily manifested in the office and infirmity. Upon the successful treatment and preservation of the root depends the usefulness and durability of our present crown and bridge work; upon it lies the only means of escape for the

* Read before the Northern Illinois Dental Society.

practitioner who never has occasion to extract tooth or root but preserves everything.

I will not give an extended account of the prevailing methods of treatment, neither will I advance any new theories of my own, but call to your minds many of those now in use. We have on the one hand the extremist who fills the root immediately, no matter in what condition he finds it, whether it be a recent devitalization or an abscess of long standing, while on the other hand the timid operator who occupies many days and weeks in simple cases fearful that some catastrophe might happen. Again there are those who take a more liberal view of the case preferring to allow nature to heal the parts before a permanent stopping is inserted, taking only as much time as the necessity of the case demands.

I do not wish to censure immediate root filling for I think there are many cases in which that is the shortest, safest and most satisfactory way of treating, but there are times when it would be a very unwise thing to do and would result unfavorably both to patient and operator.

The important point I would call your attention to is that of principle, not that we should proceed in a certain way to treat all cases, but let our better judgment dictate the proper method.

A prominent surgeon giving advice to a student, stated, that in the foundation of any great profession there were three things the acquirement of which were an essential: principle! principle!! principle!!!

I see no reason why we cannot apply principle in the treatment of pulp canals as elsewhere. One dentist claims that gutta-percha is the only true root canal filling; another claims that cotton has far superior advantages, and another that oxychloride of zinc should be used in preference to all others. By constant study in certain lines men become proficient in those. Whatever works best in your hands use it, but do not condemn other methods too severely from the fact that you are not successful with them, for your skill may not lie in that direction.

What then are the essentials in the treatment of cases presented? What are the principles to be observed? I would say *first* of all is the thorough removal of the cause of irritation. *Second* a complete asepsis of the parts, and *lastly* the closure of the apical foramen with a material which is nonshrinking and nonabsorbable.

If we can be sure we have accomplished all of these we need have but little fear of trouble. But how uncertain we are at times.

How often we feel that we have not removed every particle of dead pulp, or from the persistent discharge that we have not yet destroyed the germs of disease. Each one of the many materials now in use has its advantages and disadvantages. Can we insert medicated cotton to the end of a small or tortuous canal and be sure we have it thoroughly filled or a certainty that in fifteen years the cotton could be removed without the presence of a foul odor?

On the other hand, how many an operator, when one of his cases presents itself with peridental trouble, where the canal has been filled with either gold, gutta-percha or oxychloride of zinc, wishes to himself that in this particular case that cotton had been used, for it means that if he cannot control the inflammation locally he will be obliged to go through the alveolar process or extract the tooth.

Any hard, unremovable substance in a case of this kind causes the same chilly feeling to come over him that he has when he breaks off a nerve broach in the upper third of a canal.

The many difficulties encountered in canals of various sizes and shapes in persons of different temperaments makes it impossible to use any one material exclusively and have it work effectually. Therefore I say that according as the condition before us permits of or calls for an insoluble resisting material or one of a removable nature, let us abide by the demands of the case.

ELECTRICITY IN THE OPERATING ROOM.*

BY G. S. SALOMON, D. D. S., CHICAGO, ILL.

Some twelve years ago your essayist had the pleasure of attending a meeting of the most prominent dentists of Philadelphia and the surrounding country. At that time electricity was in its infancy. One of the remarks made was as follows: "We do not want electricity in our offices; we do not want any power that we know nothing about." Not being a member of that society, nor even a graduate, your essayist was compelled to hold his tongue, but the question arose in his mind: If the speaker does not understand electricity and for this reason is afraid to make use of it, why does he not make a study of it and find out what it is? At that time your

* Read before the Northern Illinois Dental Society.

humble servant resolved to make it a study as far as it should relate to dentistry, and neither the meeting spoken of nor the remarks made have ever at any time been forgotten by him. Marshall H. Webb answered this question as best he could, but since that time a great deal has been learned in this line so that to-day this same question might be argued to much better advantage. Ten years ago electricity was used in the dental office in connection with an instrument called the electro-magnetic mallet, invented by Dr. Bonwill, of Philadelphia. This instrument was the first to call this new power into play, and although a very good instrument, it has never become universal, as was predicted by Dr. Webb, who brought it into use and performed with it some of the finest operations that have ever been performed in the dental profession. At that time every dentist had to generate his own electricity. To-day it is different, we can use it for a dozen different purposes in practicing our profession and have our offices wired and use the electric fluid as we are using gas for illuminating purposes.

On entering the operating room the first object presented to our view is the operating chair, which is probably the most essential in it. The next in point of interest, utility, etc., is the dental engine, in fact one is hardly to be found without the other, and until lately it was invariably a foot engine. Since electricity has come into use, however, we are not obliged to have one of these instruments on the floor, although we may attach a motor of some sort to it and in this way dispense with the formerly indispensable treadle.

On entering my operating room one beholds a dental chair, the only object which would suggest a dental office. The dental engine of former days has disappeared and in its stead we have a neat little arrangement to the left of the chair, fastened to the window casing. This arrangement consists of an extension bracket, which when closed is hardly perceptible. Upon the end of this bracket is fastened a small electric motor about four inches high and five inches wide, not very much larger than the head of an ordinary dental engine. This motor has a hollow spindle, through which the end of the engine cable runs and this about completes my dental engine. Of course the sheath and handpiece are part of the apparatus. Under my instrument table is fastened a small switch, which takes up no room to speak of. This switch has as an end-piece a round handle the size of a 50 cent piece. A slight turn to the right and the motor is in motion, turning a little further, the

speed is increased to any degree desired. In conversation the question is invariably put, what are the advantages over the old style engine. Now these are so enormous that they can hardly be compared. In the first place it is always ready for use, the electricity being furnished by a company which supplies hundreds of consumers, will see that its works will not get out of order. Then it takes up no room. The work can be done in so much less time and with no exertion on the part of the operator. No one perhaps finds fault with the treadle until he learned to do without it; then its disadvantage will manifest itself. Then only do we learn how much more secure we stand on our feet and how little exertion it requires to prepare a cavity in a tooth when the foot is not called upon to do half of the work. In using a corundum or rubber disk while the rubber dam is applied, it may be annoying to have the disk tear the rubber, but it will do this in using the foot engine when handled carelessly. Now this electric engine is such a boon to the operator that after using it for a short time only he will find it impossible to go back to the old style foot engine. This much about the engine. The next arrangement of interest in my office is fastened above the motor and this is an electric fan. It is placed in such a position as to throw the air in a constant stream above the patient's head and right through the office, keeping it at a comfortable temperature and also keeping the office free from odors and obnoxious gases which are liable to collect in any closed place. The fan is such a blessing in warm weather that it is now an indispensable article in my office at least.

At the right of my chair, fastened to the window casing, is a fifty-candle light which is attached by a small rheostat consisting of a glass jar which contains a solution of sulphuric acid and two carbons. This supplies the electric mallet with its power and its work is done more complete than any assistant could possibly do with any hand mallet. The amount of electricity can be regulated by raising or lowering these carbons in the glass jar. The mallet is another indispensable article in my office and the objection to it in the shape of a battery which has always been mentioned as an objection, although none to speak of, has been overcome in this rheostat. Wherever the Edison light can be had the electric mallet can now be used without any trouble whatsoever. This may not be a generally known fact, and it is about time that it should be made known. The electric mallet will do work that cannot be accomplished

with any other instrument, no matter how carefully handled. Gold cannot be impacted in frail teeth as it can be done by the aid of the electric mallet in the hands of a careful operator.

The next appliance we lay our hands on is a two-candle light, which is placed in the mouth when we wish to ascertain whether the pulp in a tooth is alive or not. There is no better test known than this one. It is absolute proof whether the pulp is in good condition or not, and I have never yet seen a failure to detect a dead pulp.

Beside these several appliances we can also light our operating room with the electric light and have probably a swinging lamp in front of the chair to enable us to work even in dark days where otherwise we should be obliged to send our patient home.

There are certainly many more ways of utilizing the electric current, such as drying pulp chambers before inserting our fillings, disinfecting our cavities when ready for filling, not to mention the different methods for bleaching dark teeth, as illustrated by some of our operators.

The electric current may also be used for cauterizing purposes, and is so employed by medical men, why not by the dentist?

Gentlemen, the different purposes to which electricity may be utilized in the operating room are so many that it would require a good long while to enumerate them and each one would furnish a good theme for an essay by itself.

May this article, short as it is, be the means of inviting a long and healthy discussion of benefit to all present.

PROCEEDINGS OF SOCIETIES.

CHICAGO DENTAL SOCIETY.

Regular meeting, December 1, 1891, President, Dr. D. M. Cattell, in the Chair.

Dr. Edmund Noyes read a paper, entitled "Matriculate Examination of Dental Students."

DISCUSSION.

DR. C. N. JOHNSON: Mr. President and gentlemen, I am especially pleased to listen to a paper so ably treating a subject in which I have been interested a long time. Dr. Noyes has gone

over the question quite thoroughly, and I simply wish to emphasize several of the points he has made. The essayist makes a query in the beginning of his paper as to whether dentistry shall ever be recognized as a learned profession. It will be recognized as a learned profession just as soon as dentists are learned men and impress that fact upon the public mind. The essayist also says in one place that boys seem more willing to put in an extended studentship in preparing for other callings than for dentistry. They are simply willing to do that for this reason: because other callings demand it of them and dentistry does not. Just so soon as colleges demand a high standing of matriculation, so soon will students prepare themselves for that standard before applying to the college, but so long as we leave the standard low, we will have our colleges filled with a class of men who have no ambition to get up to a high standard. An argument is sometimes made that uneducated students who enter colleges often turn out the best students in the end and the best practitioners; that sometimes a student who is not well educated on entrance to the college will make a better practitioner than another student who entered at the same time with a good education, but that is no argument in favor of a low standard. It simply proves this one thing, that the man who went in without education was a better man than the other one to begin with. The fact remains that the man who matriculated without education would have been infinitely better had he gone in with an education.

Now we must change the sentiment of the whole profession before we can advance materially without causing almost a revolution. The deplorable fact is this, that to-day the rank and file of the dental profession are not in favor of advanced standards of matriculation. That may seem a strong statement, but you go out among country practitioners—without intending to cast any reflection on them—many of whom have become dentists by registration, and you will find that if one of them has a friend who wants to become a dentist, he is desirous of getting him into a college just as easily as possible and he will resent almost as a usurpation of individual rights any demand asking for an education to begin with for that student. Now that is a great drawback and those who are in earnest and who desire advanced matriculation must make every effort to raise the standard by changing the sentiment of those men.

The essayist intimated in one place I think that we must not advance the standard so rapidly as to prevent students from studying dentistry and shut out recruits from the profession. I was talking with my friend, Dr. Beers, on the subject while he was visiting here a short time since, and he took this ground, and I am inclined to believe it is true. Said he: "So long as you keep the standard of matriculation down, you will have a certain class of young men entering the dental college, young men who are not ambitious enough to enter a learned profession. The moment you raise the standard you shut out that class, but you get enough of a better class of men, and you will have your colleges as full as they are to-day. The only difference is you will have a class of men who appreciate a learned profession and who will enter a learned profession from the very fact that it is learned, "not that it is easier to get into." I believe in the end we will have just as many students in our colleges as we have today. We certainly will have just as many recruits as the profession requires, no matter how high the standard will be; it will simply be a different class of men that we get in.

The essayist claims that there has been little advance in matriculation for twenty-five years. I am only sorry that he qualified that at all. I do not believe the profession has advanced one iota in relation to matriculation in twenty-five years. We have advanced in a wonderful degree after we get the students into the college; there is no comparison with the education that we gave to students in colleges then and now, but so far as matriculation is concerned, we are just as far from the mark to-day as we were twenty-five years ago.

I will not attempt to lay down any special requirements which I think should be lived up to in matriculation. The essayist has arranged for that and I certainly think he has not been too steep in his demands. But whatever standard is required, it must be made uniform in all the colleges of this country. Just so sure as you have a few colleges asking for the higher requirements, and a few other colleges that take students with lower requirements, those colleges that admit students with low requirements will demoralize all the other colleges. Whatever system is devised must be uniform, and the colleges must all live up to it, or the standard will not be of any use.

DR. P. J. KESTER: I am inclined to believe that Dr. Johnson

and the essayist are rather over stating the matter when they say that there has been no progress made during the last twenty-five years in requirements for matriculation. It seems to me that the advance has been considerable. That is not the point I wish to make. The point I wish to make is that the examination or the necessary amount of knowledge requisite for a student entering a dental college depends on the amount of knowledge which the institution itself requires. I do not believe that it is absolutely necessary for a student to understand the latin language, for instance, when he is to come before professors who have never read a word of Latin. I do not believe it is necessary for a student in entering the study of medicine to be educated in the higher mathematics when the professor himself has never been further than the district school arithmetic. I believe, gentlemen, that just as soon as all of our dental colleges place their standard where it is necessary that the student shall acquire a certain amount of knowledge, the student will of necessity acquire it. I believe in order to raise the standard of dentistry, you have got to raise it at the college. I believe the curriculum of the dental college he attends should make it absolutely *necessary* that he shall be qualified to enter the freshman class of a first-class university before it should be required of him to be so prepared. We have heard a great deal of the preliminary requirements of the student, and I do not believe to-day that the average dental college of this country has got to that point where they can absolutely demand that standard. The fact remains, however, that in all our professional schools, perhaps in medicine the same as in dentistry, that a large portion of the profession stand low in a literary sense, but I believe the same law will apply. That there is nothing taught in the medical or dental professional schools which cannot be thoroughly understood by the average student from the average public school of our country to-day.

DR. J. G. REID: Mr. President, I believe the preliminary examination of dental students as conducted in dental colleges, is simply a farce. They matriculate and get in; there are very few that are refused. I never heard of one that was refused admission. If they fail in one place, they seek some other college and gain admission.

I am satisfied that if the preliminary examination of students were conducted under the auspices of a disinterested board of ex-

aminers appointed from local educational institutions, fewer admissions would be noticeable, and criticism would be allayed in so far as the dental college is concerned.

DR. SWAIN: I believe that the gentleman who has opened this discussion has overdrawn the matter considerably. I am too young of course, to go back twenty-five years, or very many years, in fact, in this matter of education, but it is my impression that there has been a decided advance inside of twenty-five years. Dr. Reid has stated some truth, Dr. Kester has pretty nearly got on to the rock bottom of this matter, but unfortunately I represent fifty-four students now who within a few months have presented themselves for admission to dental colleges; only four of that number were compelled to pass an examination because they presented the credentials which admitted them, either certificates as teachers, diplomas from high schools, diplomas from academies or colleges. Now I think that is a pretty good showing and I don't believe that twenty-five years ago any demagogues in this country could have made the same statement. Now it seems to me that this is a decided improvement upon anything that I know about from reading or hearsay. The gentlemen who are teaching these fifty-four men, so far as I have conversed with them, and that is to some considerable extent, have no fault to find with their intelligence. In fact, some of the teachers think they know a little too much. Think the students are a little bit too wise. I have no doubt that is the truth, because it is usual, I think, in all such instances.

This simply means that a more intelligent class of men are entering our schools of Dentistry, and that the necessities for a severe preliminary examination are growing proportionately less, with the masses of students applying for admission to our schools.

Now with this statement I am going to sit down and see what develops hereafter. I may have a word to say a little later on.

DR. ALLPORT: Mr. President, I cannot agree with the statement in the essay, nor with the remarks of Dr. Johnson, that there has been no advance in the matriculate examination of dental students during the last twenty-five years, and I must agree with the statement of Dr. Swain, that in some of our schools at least there has been a marked improvement during the time named. In fact, nearly all of the advance made has taken place within the period stated, and, as it has been nearly forty years since I graduated in dentistry, it is not unreasonable to suppose that I am as well in-

formed on this subject as is any one present. I do not guess in this matter, but simply state what I know to be a fact; it is not just to class such of our colleges as have tried to do their duty in this respect with those that have not; they should receive credit for what they have done.

Dr. Noyes states in his essay that our colleges must have students. Had he said "some of our colleges *will* have students" I should agree with him. The trouble is we have too many dental colleges and that some of them, regardless of the good name of dentistry, as well as of the interest of the public, are determined to have as large a number of students as they can get in order to swell their annual dividends. This class of colleges is organized and run for the sole purpose of making money; their managers care not a rap as to the qualifications of their matriculates or graduates, so long as profit is made out of them. Should any one question the correctness of what I say, let him look about him in our own city and see if my statement is not true; he will find colleges here conducted by men who never practiced dentistry a day in their lives, who care nothing for the good repute of our calling and who are entirely ignorant of the qualifications that a competent dentist should possess. They hire their journeymen teachers, many of whom ought to be attending lectures, and then matriculate and graduate, without regard to their qualifications, all the students they are able to entice into their institutes. The turning out of dentists is with them a purely manufacturing enterprise, conducted upon business principles: the greater the number of students they can secure and graduate at fixed fees, the greater will be their profits at the end of the year. Their chief concern being to do as large a business as possible and make all the money they can.

The essayists ask if dentistry will ever become a learned profession. The asking of the question is an implied acknowledgment that it is not. He then, in behalf of our schools, attempts to shirk the responsibility in this matter, and to place it upon the community, the profession, or somewhere else, rather than upon our colleges, where it properly belongs. Dentistry will become a learned calling or profession just as soon as those who educate dentists demand a proper degree of learning as a requisite for matriculation, and of professional science for graduation; and not before.

It is of no use, therefore, for those who are managing our colleges to endeavor to shirk this responsibility, for professional sentiment upon this question depends upon the quality of the education possessed by the graduates they send out.

A "learned profession" is a calling requiring knowledge and skill. When applied to dentistry it means a thorough knowledge of the nature and causes of all the diseases, the treatment of which comes within the province of the dentist, as well as skill in adapting the most improved methods of science and art in treating them. It makes no difference in this matter whether the diseases are produced by local or by constitutional causes, or whether they require local or constitutional treatment. By professional learning does Dr. Noyes mean skillful manipulation in filling teeth, the making of artificial crowns and of sets of artificial dentures, and the application of local remedies for the cure of diseases of the oral cavity? Or does he mean the broad medical knowledge that would enable a dentist to diagnose the causes and tendencies of the manifestations of all of the diseases of the mouth, and to prescribe, when necessary, not only local, but constitutional treatment for its relief, with the same degree of medical intelligence as that with which other specialists treat the diseases that come within the provinces of their respective departments of the learned profession of medicine? If he means the latter, dental students will be obliged to gain their education elsewhere than in the ordinary independent dental colleges of to-day, for in them they do not teach it.

I may be wrong in my opinion, but it is my belief that dentistry will never be classed as a learned profession, or even as a part of a learned profession, until all of our dental schools are so connected with medical colleges or universities that these institutions will be held responsible for the *general* medical instruction of dentists. You will naturally ask why I make this statement. In the first place, there are very few teachers in our regular dental colleges who think it essential that dentists should be as well educated in the fundamental principles as those should be who make a specialty of the treatment of other diseases; and so long as teachers do not think this knowledge important to their students, they will neither teach it to them nor exact it of them, for they will not teach knowledge which, in their opinion, is not essential for graduates to possess. That this degree of medical knowledge has not been imparted to most of our dental students is apparent from the well-known and

humiliating fact that dental graduates are not as well qualified to treat constitutionally diseases of the oral cavity as are other specialists to so treat the diseases that come within the scope of their practice in other parts of the body.

DR. J. N. CROUSE. Mr. President and gentlemen, this is a little out of my line. I think I am the only man in Chicago that don't run a college, consequently I don't know much about it. Still I am one of those that favor education, and I consider that an education should be a discipline of mind, and that the dental profession ought to have the best disciplined minds of any profession. It requires greater ability to be a first class dentist, to practice right and well, than any other profession. Now let us see if that is true. What do we require from a dentist? Skill—he certainly must have it, cannot get along without it. Integrity—he might get along without it, but it would be kind of a rough road for himself if not any body else. He ought to have good judgment and without good judgment he is unfit to practice dentistry. In order to have good judgment he ought to have a mind that can reason from cause to effect, can take the subject and think it over systematically. Now education is to learn to think logically. A dentist ought also to be a gentleman. So if there are any young men here who have just started dentistry and think they have an easy task before them, they are certainly greatly mistaken. A young man asked me not long ago if I would recommend him to take up dentistry. I said to him, a man that has mind enough to practice dentistry, that has good judgment, perseverance, strict integrity, ingenuity and power to reason, can do better at something else. He said if that was the case he would be a big fool to go into it. I told him to take up something else. Now strict integrity and the power to think logically are not found in every individual, and so if you are going to bring the matter down to a test, we cannot recommend others to go into it because they can do better elsewhere. I mean so far as money making is concerned. Now as to the pleasure of it, I like to practice dentistry and probably would have gone out of it ten years ago, when an opportunity was presented to me to go into another business, if I had not grown up to this and had become so infatuated with dentistry that I did not want to leave it. But had I started twenty years ago in another profession, it would have been better for me financially.

What is the dental profession made up of to-day? I hold to-day

over a thousand notes for ten dollars each of men who are not at this time able to pay. They want to get along and pay their proportion in a good cause, and yet are not able to. Does it mean that dentistry as a means of livelihood is well compensated? I think not. I do not think the field is enticing enough for that grand display of intellect that you are going to try to lay out for the colleges. It is not a good paying business, and a man who has ability enough to do something else, and knows it, won't go into it. I have not induced any one in the last twenty years to take it up as a lifetime work. I have had a great many applications and have talked on the subject with a good many people, and with very few exceptions by the time I am through discussing the subject with the young man he decides to take up something else. It requires more years and ability to practice dentistry successfully than any other profession, and life is too short to make it a desirable profession.

As to the colleges, I think that what Dr. Allport has said here is true, that colleges, many of them, are run too much for making money. But you take Harvard School, which raised its standard high a number of years ago, what is the result? Their classes have been small right straight through, and where they required a three years' course, and a rigid course, their classes have been so small that, I have been told, they are letting up on that high grade and are trying to even up a little more with the other schools.

Now I think it is within the power of one body of men to raise the standard of the profession—I mean the National Board of Dental Examiners, composed of representatives of the different States. The laws will sustain them, they have the power to do it, and I should be very greatly surprised if within ten years this organization does not bring the professional education of those coming into the profession somewhere near the position it ought to take.

DR. C. F. HARTT: I wish to make a plea for the country dentists. I have seen quite a number of country dental offices, and after visiting a few I find their libraries as a rule are larger and better equipped, their instruments are fully as good and they are quite as intelligent as city dentists, also from what I have seen of their work, they compare favorably with their city brothers. A man in the country towns generally has got to be a pretty good dentist, if he is not he cannot stay there, and because some come in under registration it does not necessarily imply that they come in with little or no education.

So far as I am able to judge the country dentist is fully equal to the city practitioner. Of course there may be some few exceptions. But as a whole, both in city and country, I honestly and firmly believe that the dental profession is not surpassed by any body of men in point of usefulness, nor in unselfish and patient devotion, with which many sacrifice themselves to their noble calling, some of whom will never receive their full reward here, yet are willing to work on till the day when they shall receive their reward openly for that which was done in secret.

DR. JOHNSON: It appears that I dropped into several errors. I made the one error of speaking about the state of affairs twenty-five years ago. About that, Mr. President, my extreme youth should have prevented me from saying anything, I am willing to admit that I do not know anything about, except from my reading. I emphasized what Dr. Noyes said in regard to the *requirements*, not to the present state of affairs, but what is required. As I understood the essayist, he said that requirements for matriculation twenty-five years ago were practically the same as they are to-day, that is that there had not been much advance in the matter. I do not undertake to say that the class of men we get to-day are as uneducated as the class of men that they got twenty-five years ago, but I do wish to say that if it was any easier to get into a dental college then than now, God help the state of affairs twenty-five years ago. I am glad that we are getting a better class of men, but what I refer to is the requirements. I have not seen the man yet but who could get into some dental college if he wanted to. It seems to me that our matriculation methods are just as low as they possibly can be and exist at all.

What I said in regard to the country dentist was meant for no slur on that class of men at all; not in the least. There are a great many good men among the country dentists, but I said that strong opposition to any great advance in matriculation would come from country dentists—not from all, but from many of them.

DR. A. W. HARLAN: After listening to the remarks of the various speakers and the paper of the essayist, I feel that I cannot remain quiet, because I want to make some supplemental remarks to fill out those of Doctors Noyes, Crouse and Allport. Dr. Crouse says that a dentist must be a man of integrity and he must be wise and capable of thinking. Now if he is capable of thinking, he must have a decent education before he begins the study of dentistry.

That is the point that Dr. Noyes is trying to make. Dr. Allport says that eventually, in order to raise the status professionally the dentists must be specialists in medicine. Well, a great many dentists think that they are specialists in medicine now, but they are not, even though they have M. D. degrees. There is nothing that will make a dentist a specialist in medicine except knowledge, and all the knowledge attainable in this world is not covered by the M. D. degree. It appears to me from my experience of twenty-five years—it has been a little over twenty-five years since I began the study of dentistry, I am not too modest to admit that,—it has been my observation during those twenty-five years that in many of the States of the United States there were no laws regulating the practice of dentistry and consequently those who did enter upon the practice never went to college at all, and I believe there was a better class of men all round entering the dental colleges twenty-five years ago than are entering to-day, because all those who entered then, did so because they wanted knowledge, and now they are compelled to do so, and just at the present time we have a glut of that sort of material. But very soon it will come out all right, because the three years that is now required of the student before he can come up for graduation will shut such people out and they will go into other occupations.

Dr. Crouse said another thing this evening that was very good and that was this—he didn't say it exactly this way, but it was to this effect: What are the inducements for a man of education to undertake the study of dentistry? Are the large emoluments from the practice so great that everybody is seeking for them, reaching out for them, because there are no other avenues where an existence can be secured and wealth acquired in a short time? There are plenty of avenues that afford a much better income, generally speaking, than are secured by the men who are in this room. Probably there is not a man here who earns \$25,000 a year, and I feel sure if I were practicing as lawyer that I would earn double that, and if I were practicing general medicine, I know that I would earn as much as that. I do not believe there is a man in the room that ever did earn \$25,000 a year, but I know of an eminent surgeon in this city who made \$75,000 in one year. Probably there are a dozen men in this room whose acquirements and general intelligence make them equals of the eminent surgeon whose name I will not mention. Probably one of the reasons why educated men

do not enter upon the study of dentistry is, because the emoluments are small. There are too many mediocre intellects engaged in this occupation. And if men are content to live along on incomes of \$2,000 a year, or \$3,000 a year, and our profession is filled up with that kind of men, it is very hard for those who have high ideals, to reach a high standard. But I say, God speed the time when the matriculate examination will be so high that it will attract men of talent who will be self-respecting and have ideas that will be so large that they can have fees commensurate with those ideas.

DR. ALLPORT: I am glad that Drs. Harlan and Crouse have spoken of the emoluments of dentistry. I quite agree with them that there is a very erroneous impression in the public mind in regard to this matter, for generally, after all expenses are paid, dentistry is not the lucrative calling that many suppose it to be. I have been, and still am, very fond of the practice of dentistry, and am anxious to see both its science and its practice advanced in the highest degree possible. The time was when there was no wish nearer my heart than to see at least one of my sons engage in the practice of dentistry, but I can now say that I am truly thankful that none of them have done so; for such a great hoard of improperly educated graduates are turned out from our dental colleges that the profits of the profession are no longer tempting, and, to say the least, its respectability is not now what it should be. While a few of these graduates may be considered as well qualified to practice, a large majority are not, nor are they making respectable livings. Dr. Harlan says that there are very few of the dentists in our city doing a business of \$25,000 per year, and many of them not over \$2,000. This estimate is too high and I challenge any one to show that, out of nearly seven hundred dentists in Chicago, we have five who are doing a business of over \$15,000 per year, and that there are ten more who are doing over \$10,000 or twenty more who are doing over \$5,000 a year, (while there are large numbers whose net income will not reach \$1,000;) and that there are not more dentists in the city whose net income is not over \$1,500, than there are of those who earn \$3,000 per year, and yet in their scramble for money, our colleges *will have* students; and to get them the entrance examination is made easy, as their graduation is as good as assured, and they are encouraged to believe that a lucrative practice awaits them as soon as their course is finished; notwithstanding

the fact that, with a very large majority of the practitioners of dentistry, the profession is fast becoming a beggarly calling.

DR. CROUSE: I want to ask you a question. How is it with the medical profession? I want to know which is the easier to go through, a medical school or dental school? Who is turning out the biggest lot of quacks to-day? It is true that the medical profession to-day are turning out more uneducated men, more men unfit to practice medicine and take life into their hands, than the dental profession. It is true that the medical profession to-day are not able to control that matter half as easily as we are, and a very large per cent of the men that go through medical schools and start medical careers find out that they are not fit for it and drop into something else. A physician riding through the country sees opportunities for getting out of it and going into something else, but when you are shut up in your office all day you cannot look around for another opening. I have sat for six months in the medical college with a class and I know what the average ability of medical students is. Any man who will sit in a medical school and watch the students right through will find their average is not as good as that of the dental colleges. The compensation for the medical profession is not any better; the beginners in the medical profession are starving to death. The medical profession to-day are having the hardest kind of a time to get their bread. I am only holding this up to show that the evil is there as well as here with us. It is a great evil: it is a great wrong for men to make that mistake, to go in and spend the best part of their lives on a thing that is going to be a failure. It makes me tired to have men stand up here and hold up the medical profession to me. Every man that observes this thing must know that that is a very poor example to hold up. Law seems to be better, but the men have got to study for it. There is not a boy who cannot start in an office to read law, but when he gets to the examination is where the test comes in. I would not teach in a dental college, not if you would give me \$50,000 a year, I would not burden my conscience with encouraging young men to take up an occupation for a lifetime work that was not the best thing for them.

DR. HARTT: We have got to go back further than the dental colleges and medical colleges, gentlemen. I stated here before, and I say it this evening, that the poor man is getting poorer every day and the rich are getting richer. That is where the trouble

lies; they have not got the money. There is work enough for every dentist in this country, and more than enough to keep him busy and have a bank account at the end of the year, but the people have not got the money. I can refer you to some of the most prominent men in this city, and you will hear it from the best pulpits that the people are getting poorer. Gentlemen, there are a great many other people besides dentists who do not have enough to eat, who cannot make from \$5,000 to \$15,000 a year. This is a great rich country and it is full of everything and it is all in the hands of a few and it is going into the hands of still fewer. It is not essential and perhaps not best for a man that he should drive fast horses and give champagne suppers and use up an income of \$15,000 to \$20,000 a year. If I wished any work done on my teeth, I should sooner have a man attend to them that was not quite so flush.

DR. G. J. DENNIS: I would like to say something this evening on behalf of the young men in the dental profession. It seems to me that it is rather a discouraging outlook for young men in the dental profession, because they first learn that the standard of education for the dentist is extremely low, that their ability is low, and they next learn that the compensation is low, that it does not afford them a compensation in proportion to their efforts and in proportion to their ability, and then they next learn that their social position is on a rather low scale. I am sorry to hear that, because I think that there is a great deal gained by having respect for one's own self, and I think if the dental profession is self-respecting, it will have a great deal to do with the standard of education and the amount of compensation and social position of its members. If men like Dr. Crouse, Dr. Allport and Dr. Harlan, when young men of ability come to them, would encourage such young men to go into the dental profession, instead of stating the facts as they are with regard to their ability in commercial pursuits, we would have a better class of young men. The young men who have no ability would not flock to the profession, because they would find their attainments were not sufficient to compete with men of better ability. In looking over the different professions and inquiring why certain men are successful, we find it is due in most cases to the preliminary foundation that they have laid for their success, in their previous studies and in the early work that they have done in their particular line. Those men who have attained eminence as law-

yers, as ministers, or as doctors, will be found, as a rule, possessing a fine education. If they have not received it in the school or in the college, they have gotten it by a systematic kind of work, under systematic direction of some kind, which has prepared them for later successes. It is these first principles that help a man along in later years.

I have in mind a gentleman in this city who stands very high in his profession, I have been brought into contact with him in various ways and I have wondered at his success. It seemed to be so spontaneous and it gathered people to him in a certain way that was remarkable. His fund of knowledge seemed inexhaustible, I wondered how he was able, as young a man as he was, to have that fund of knowledge. I found that it was due to the fact that in his early years his training had been such that it was done without difficulty, a knowledge of his early work was retained and his present work was carried on in his present position so that it was hardly any work at all. If any man had filled that position without that preliminary training he would have been a failure. I think that in dentistry we can have such men as that by offering to them the example of men who have gone before. A gentleman in speaking to the Alumni Association of one of the medical colleges of this city spoke of the advantages or inducements there were for a medical student to take up the study of medicine. He said that a man could make some money; he had a chance for some social position and he had a chance to cure some people, and he asked if that was all. He said there was precious little in the study of medicine to a student if he did not become more of a man and did not grow larger in every way, intellectually, morally, and so on. It seems to me that that can be applied to dentistry just as well. I think Doctors Crouse, Allport and Harlan could induce better men to go into the profession if they would do so.

DR. NOYES. I do not think much more will have to be said. This discussion has taken a wider range than I expected it would, and I feel a little disappointed, as perhaps most members do, that the particular subject of the essay has not received a little more attention. I really hoped that something would be said upon the practical side of this question, as to the feasibility and the means to be adopted for some definite steps of progress, which it seems to me the time is about ripe to undertake.

Perhaps the statement which has been criticised by one or two

in regard to the lack of progress in the entrance requirements during twenty-five years ought to have been a little more elaborated and perhaps somewhat qualified. I think it is a little difficult to determine the question with accuracy. The thought in my mind was that the minimum requirement had not much changed in that time. I grant very gladly that the average attainments of the students who actually enter colleges is greater than it was then, and that a few of the colleges have a better standard than they had some years ago, especially within the last few years. In respect to the better training of the students who come into the colleges, it is due more to the first consideration claimed in the paper, the general increase of schooling that children throughout the communities receive as compared with twenty-five years ago, than to any higher positive requirement on the part of professional schools.

The closing sentiment of the paper that the colleges cannot make a higher standard than they can find students willing to comply with, is perhaps not exactly the ground which we want to stand upon, and Dr. Johnson's statement is probably truer, that a sufficient number of men will be ready to prepare themselves in any way that the colleges will absolutely require. There is a singular difference which I do not quite understand, though perhaps some of the reasons for it are plain enough, between the powers and motives which we rely upon and which experience has shown to be effective in other departments. It was said in the discussion that we cannot hope for much progress unless all the colleges in the country agree upon a definite standard and hold up to it, because if only a few of them advance the standard they will be broken down by those who will not advance it. Now in respect to ordinary literary college education it has not been that way, it has not worked that way at all. The colleges in this country which require the highest standard of matriculation and enforce their rules most rigidly are the ones that have the largest number of students. It is only necessary to mention such institutions as Harvard and Yale and Johns Hopkins without going any further. Now there are colleges in this State, one I know whose degree of A. B. is not much better in respect to scholarship, does not represent more work or actual attainments of studies gone over than the entrance examination of Harvard college, but it has not one student for twenty that Harvard has, and it is not a prosperous college and the other is. It is evident enough that we cannot do

that now. Whether perseverance and generosity in carrying on dental colleges with strict requirements and a high quality of teaching would bring the time when the college with the highest standard most rigidly enforced would be the one to which the students would flock, I cannot tell, but I would like to see the time come.

OFFICE PRACTICE.

DR. CROUSE: I have to report a very peculiar case of exostosis, which has developed to such an extent as to throw the jaw open. The gentleman who is suffering with this affliction is an invalid. He was once a lawyer of prominence here and an old patient of mine. He came to me a few weeks ago, and I was amazed at the enlargement; he could hardly talk. An examination showed a very great enlargement of the alveolar process and to such an extent that I think I could pass my thumb in between the teeth. He has been somewhat mentally deranged at times, and I do not think he is altogether himself, and the matter that interests me very much is the question of whether this ossification will take place all over the body. I am inclined to think that such may be the case. I have had one or two talks with his physician and he talked about his dying of softening of the brain; I told him I thought he would die of hardening of the brain. His trouble has increased very rapidly indeed within a few months. He is a man of from forty to fifty years of age and has been a very temperate and industrious man; I have known him for twenty years; he has had to give up his practice and has had to give up everything on account of his health. Some two or three years ago he came to me with this mal-articulation to a less extent, and I helped it some by cutting down one or two of the molars that seemed elongated. In order to do that I had to kill the pulp. It is a matter that I shall watch carefully and will be glad to report to the society the result. He is suffering in general with his teeth; can hardly get his mouth shut enough to enunciate his words properly. It is a very serious question to know what to do with him even for temporary relief, whether to cut down the teeth or extract them. It is not an exostosis of the roots in the alveolus alone, but apparently the whole jaw is enlarging around the teeth. It is a bony deposit which is elongating the teeth. The exostosis is very much less above than it is below.

A MEMBER : I think we would find exostosis of the root, probably.

DR. CROUSE : There is certainly a large deposit of bony matter around the teeth. It is a matter that has given me a great deal of concern, because I have not known what to do with it. It is very nearly alike on both sides, the two back molars seem to have more than the others. I can see an enlargement of the alveolar process all around.

DR. ALLPORT : I have a case not just like that, but somewhat similar. It came to me nearly a year ago from a Western city. It was a lady who had been considerably out of health and she was under the care of a physician here, and her back teeth were thrown out so she could hardly get her jaw together. Most of her teeth were decayed so that I had to take them out. It puzzled me at first, but being obliged to take out some of her teeth, I found very large exostoses on the roots, so that I just split the jaw right open, the lower jaw, and a number of her upper teeth were the same way, and I have taken out all of her teeth except six lower teeth. Almost every one of her teeth that I removed had this addition, both above and below. I have some of those teeth in my office now, and some of them are as large as my finger.

MINNESOTA DENTAL SOCIETY.

COMPARATIVE ANATOMY.

DISCUSSION.

DR. E. H. ANGLE : Mr. President, Ladies and Gentlemen : I have listened with pleasure to the reading of Dr. Thompson's paper, and, as a rule, I do not believe in devoting much time to the complimenting of papers. Yet I do feel this paper is exceptionally good, and I am glad that we occasionally find a man in our profession who can write so broad, deep and comprehensible a paper, the tendency of which is to give us a greater appreciation of dentistry and to lift us out of the narrow rut into which we as specialists are so prone to fall.

In the paper I find much to admire and but little to criticise. I suppose if I were a believer in the old forms of orthodoxy, I would then, doubtless, have found much to disagree with ; but as I am a firm believer in the main principles of evolution, I can fully agree

with the essayist, for he has elucidated only well-known principles of the well-known doctrine, so that in attempting to discuss the paper I can do little more than intensify some of the points which he has brought out.

First, in regard to the value of the comparative method of studying, I fully agree with the essayist. I believe it to be the true and most natural way of studying. Indeed, the most of our knowledge from youth to old age is gained by comparison. For instance, our ideas of size, color, weight, height, distance, etc., are nearly all gained by comparison. We gradually gain these ideas from the earliest development of the human mind, and they so grow to be a part of our being that we hardly recognize how we came by them, but if we reflect we will see we obtain them almost entirely by comparison.

Those of you who were fortunate enough to have heard Dr. Sudduth's lecture on the morphology of the blood, in this room, a few weeks ago, will remember what a flood of interest and instruction was turned on the subject, with the slides showing the comparative anatomy of the blood. And so it is throughout the study of anatomy. The comparative method is invaluable.

Now, to attempt to gain a knowledge of so complicated a subject as our teeth, without studying their comparative anatomy, seems to me to be utterly absurd. And I have long wondered why members of our profession, occupying prominent positions, could be contented in knowing or caring so little about the wonderfully instructive and exceedingly fascinating study of comparative anatomy of the dental apparatus.

When the time comes, as it surely will, when colleges are conducted for the purpose of thoroughly educating our young men, instead of for the purpose of increasing the income of a few selfish and unscrupulous stockholders, then will the great importance of this subject be recognized and its bearing upon all departments of dental science be understood and appreciated.

Not until more attention is given to the minute anatomy of the teeth throughout their process of development and in their maturity will the vexed questions regarding their structure and nourishment be understood.

In regard to the complicated subject of dental irregularities and abnormalities and their causes, I have learned more by comparative study than by any other method, and I believe we will never reach

the true solution of many of these problems until a closer study of this subject is instituted.

The study of the histology of the human teeth—the structure of enamel, the direction of enamel rods, the dentinal tubules with their primary and secondary curvatures and their contents, the processes of the odontoblasts, the interzonal layer, the nerve and blood supplies of the pulp—are all hard for the young student to understand, but by comparative study, taking up first the simpler forms of dental tissues, and gradually working up to the higher and more complex, the process becomes easy, and the knowledge gained is never forgotten, it is so firmly fixed in the mind.

The portion of the paper relating to the law of atavism or reversion to original types is instructive and interesting, but I cannot understand how Dr. Thompson can so clearly draw the line between reversion of type and variation of a type to a new form.

For example: I have a model of a jaw showing some twenty-five teeth, and I understand from the history, that they are all permanent. Surely we would find difficulty in pointing to any of the mammalia to which we could refer this exceedingly large number by reversion.

There is a similar model in a Pennsylvania college which contains twenty-three well developed teeth, while cases of four and even five molars on a side are reported.

The typical number is but three in the mammalia, unless it be some of the marsupialia. One of the most common regions of the mouth for the supernumerary is on the buccal surface of the second molar superior.

Can we with such certainty account for these digressions by atavism?

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WORLD'S COLUMBIAN DENTAL CONGRESS.

Obscurity will not be considered a good reason for failure to attend the great meeting of 1893, as it is the purpose of the promoters of this international gathering to invite all dentists of respectable lineage and antecedents, from every clime, to participate in the grandest meeting the world has ever seen. It is not too soon to begin preparing and gathering specimens of all sorts, and mechanical devices of every variety to be exhibited in Chicago. Our best thinkers and authors are already beginning to arouse themselves to make this an event worthy of the cordial effort of every progressive dentist in the world. Success to the undertaking is already assured, as the journals everywhere have given it great publicity. The World's Congress Auxiliary is giving it support unlooked for in the inception, and now it remains for the journals to stimulate their readers to help in every way possible to fulfill the promise made when the movement was inaugurated—to constitute it the memorable scientific event of the year 1893. Very soon the list of committees will be made public, so that the mass of material to be presented can be so arranged as to be presented in a systematic manner. There will be no confusion, and every one invited to take a part will have time allotted him and an audience that will thrill him with an eagerness to surpass himself at this meeting. Make a note of the time in your book for 1893.

A BLOW AT DENTAL COLLEGES NOT LOCATED IN MICHIGAN.

The amended dental law of Michigan reads in section 1, as follows :

"It shall hereafter be unlawful for any person to practice dentistry in this State unless such person has received a diploma from the faculty of a reputable dental college, duly incorporated under the laws of this, or some other State of the United States, with a course of instruction and practice fully equal or equivalent to that of the college of Dental Surgery of the University of Michigan, or a certificate of qualification from the Board of Examiners provided for by this act."

If a partisan Board of Examiners were by chance to come into office there would be little difficulty in refusing to recognize the diploma of any and every school not located in Michigan. It is a very uncertain power to place in the hands of any Board of Examiners as it will lead to favoritism and may compel persons residing in Michigan or those who contemplate a residence there to first attend the dental college at Ann Arbor and take its degree before entering upon practice. A few years ago this sort of legislation was passed in Maryland but the law was soon amended so that the colleges in that State were placed on an equal footing with those in other States, that is, graduates from other reputable colleges were admitted to practice without examination. As long as a diploma is recognized as *prima facie* evidence of the right to practice, reputable colleges should be allowed a fair field for their graduates as there is no evidence that a student who graduates after three years attendance upon the courses in a reputable dental school is deficient in any sense or the inferior of the one who graduates in Michigan, Pennsylvania, Ohio or elsewhere. As it now stands all the schools belonging to the Association of Faculties have adopted and are living up to the three year rule ; some, it is true, have not a continuous nine months' term, but all have, and give about seven to eight months of instruction during the year, and none of them absolutely close their clinic rooms during the year, so that a student who so desires may spend the whole three years in the school. We do not insinuate that the Board of Examiners in Michigan will discriminate against the graduates of other schools, but its complexion may change by act of the Governor of the State who has the power to appoint, and if the executive should appoint a Board

not friendly to any school of dentistry not located in Michigan, there would be unjust discrimination. For ourselves we believe that all graduates should be examined by examiners not connected with any school and no person should be examined who had not obtained a diploma from a reputable school showing that he or she had taken a prescribed course of study previous to an application for license to practice.

AN OLD IDEA USEFUL.

We believe it was Dr. W. H. Eames who said "if you wish to remove a deciduous tooth, and through fear the child will not permit it, slip a piece of rubber tubing over the crown down to the neck of the tooth, and in a few days the tooth will be so loose that it can be extracted with the fingers." If you have such a case try it and see the exact result.

THE MEDICAL CONGRESS, 1893.

Our esteemed friend, the editor of the *Dental Practitioner and Advertiser*, in the January number makes haste to place a wrong construction on the note in our December issue concerning the International Medical Congress, 1893. What we inferred and what we meant was this: There is a look of sincerity about the establishment of the dental section in the Medical Congress. If we have a place there it is because we are entitled to it, and preliminary programmes should not be issued leaving out a section which could be larger, numerically, than any other section in a Congress. We are not opposed to a section in a Medical Congress, but we are opposed to begging for a place in the Congress every three or six years. It is not probable that the question of dentistry being a specialty in medicine will be settled for some time to come; in the meantime we are not in favor of dentists being used to fill a gap when it suits the managers of a Medical Congress to invite them to come in.

Dentistry is not a newfangled invention or discovery, it has been practiced for centuries, and if the authorities at the head of proposed Medical Congresses are not alive to the aims and importance of the field of dental surgery without being continually reminded of it, it is high time that dentists should stand on their

dignity and not thrust themselves into a place where it is evident they are considered as intruders.

Sections in Medical Congresses are made up by those who are appointed by the organizing committee; they do not originate *de novo*. It is the custom for such a committee to designate one or more gentlemen to be responsible for the organization of a section, and in the announcement made there is no hint of a section on odontology. This is all the more regrettable at this time, because dentists are looking for opportunities to display before practitioners of medicine the benefits that the public receive at the hands of those engaged in daily practice, as well as to show the advancement of dentistry as a science.

DOMESTIC CORRESPONDENCE.

HOW I GOT A START IN DENTAL PRACTICE.

CINCINNATI, Dec., 1891.

To the Editor of the Dental Review: Dear Sir—In the current number of your journal appears an article estimating the expense of fitting up an office in city and country. The figures are so extravagant that I feel impelled to recount the early experience of a very poor young man, to wit myself, in renting an office and working up a practice. This I do, not with any feeling of vanity in the opportunity of relating my struggle at the time, but by way of encouragement to the army of young men preparing to enter the profession, who are without means or definite prospects. That a majority of the students now in our colleges are of this description I need not undertake to demonstrate. That many of them would be virtually debarred from practice if such an outlay as the anonymous writer of the article to which I have referred has indicated as a prerequisite were required of them, is probably true. I shall then for the purpose of showing what may be done with scanty means, tell what befell me early in my career.

As I anticipate a rather florid display of my ignorance at that time, I beg to preface my story with a statement or two. I went directly from the counting room of a mercantile house in Cincinnati to the dental college, having had no practical experience whatever of dentistry. I had become so imbued with the idea that the study of the theory of a profession is of paramount importance, that while attending lectures I almost wholly neglected practical

work, innocently assuming that the trifling details of filling teeth, extracting, and making plates could be easily picked up later. When at the end of the term I received an offer to assist as a "rubber boiler" in a western office, I joyfully accepted with little or no misgivings as to my ability to fill the position. Up to that time I had made two full upper gold plates out of brass, in the college laboratory, three partial rubber plates, and a full rubber denture for an aged negress. The latter case taxed my ingenuity. I remember. I must have forgotten to take a "bite," for when I inserted the teeth the under set projected unduly about an inch and a quarter, presenting a curious appearance of prognathism not commonly found in the African subject. Then in the upper set the bicuspid on one side were abnormally elongated, while on the other side they were "out of sight." Otherwise the fit was unexceptionable, and as the old lady was anxious to attend a lawn fete that afternoon, she was easily persuaded that by perseverance she could readily master any trifling annoyance she might experience in the first wearing. In accordance with her request I had selected narrow, white teeth, so that the effect when she smiled suggested a white picket fence closing the entrance to a coal mine.

Encouraged by my success, I prepared with a glad heart for the five hundred miles' journey to my new field of usefulness, by borrowing \$25 from a brother, who had implicit faith in my mechanical genius, and in my assurance that when it came to the matter of salary, as yet unsettled between my employer and myself, I would be able to name my own figure. I haven't the slightest idea what he ever did with the sixty days' note I gave him.

But I must get at the pith of my story. My new employer proved to be an affable, good-natured man, who adhered so strictly to the scripture injunctions to take no thought for the morrow, that his reputation for piety and for inability to pay his debts extended far and wide. On the second day of my service he so far took me into his confidence, as to borrow all the money I had. At the end of the month I concluded to quit. I might have "resigned" earlier, without encountering very serious opposition, I presume. I recovered the money I had lent, and saying nothing about the amount of my salary due me, took the first train in quest of an uncle who lived a hundred miles away. I wanted to get as far away as possible from my employer, for while he had not once referred to the matter, I could see that it embarrassed him whenever

he thought of the \$75 worth of plate work I had spoiled for him. My uncle, a farmer, had never seen or ever heard of me. On my satisfying him of my identity, he consented to my staying at his house until I could pull myself together and decide what to do. The latter question he kindly undertook to decide for me a day or two later ; he lent me four rusty forceps of an antique pattern (he had been a physician, years before), mounted me on an old lame horse, and started me off to seek my fortune. I had never so much as extracted a tooth, and I think my first effort hurt me quite as badly as it did my patient, a stout country girl. As the tooth came out she fell down in a heap on the floor. I thought for an instant that I had extracted with the tooth the girl's vital principle. But she got up presently, unwound about two yards of blue yarn stocking which she took from a bureau drawer, and handed me half a dollar. Then I hurried away to my horse, pale but exultant.

For two weeks I traversed the highways and crossroads of that benighted country, and then I returned to my uncle's house with \$44 in dirty scrip, money honestly earned by extracting and breaking off teeth. The sight of the roll immediately made me "solid" with my uncle. I suspected, however, that he felt somewhat chagrined because of his having himself overlooked the mine of wealth I had tapped. Within a day or two several persons with badly swollen jaws appeared at his door, which circumstance prompted me to act without delay upon a suggestion my uncle had offered, that I retire on my laurels to a small town twenty miles distant, and open an office. I had never, until the morning of my arrival at the place, so much as heard its name, and of course did not know a soul there. I introduced myself to a physician, and before night had made an arrangement with a lawyer—the only one in the place—to share his office, paying him three dollars rent in advance. He had two rooms over a general store, on the public square. The rooms were separated by a pine board partition, unpainted and unpapered. They were unpretentiously furnished with a rusty box stove, two chairs, a settee and the lawyer's bookcase. The floor was carpeted with coffeesacking stitched together. The approach to this cozy retreat was by means of an outside stairway which ushered the caller into a large store-room filled with boxes and barrels, between which a passage was usually to be found leading to our double office. Among the rafters overhead a varied assortment of mud and paper wasps' nests supplied the lack of any express effort at ornamentation.

By way of fitting up, I bought a lounge-bed (second-hand), a lamp, two or three chairs, and a tin hand basin. I also rented for \$0.75 a month a new barber's chair, the barber having died the week before. For instruments I had half a dozen cheap pluggers, half an ounce of amalgam, a few drills and excavators, and my uncle's forceps. With the ingenuousness of youth I wrote to a western dealer ordering \$25 worth of instruments, foil, &c., promising to pay in the indefinite future. The goods came promptly by the first mail, and with it a kind note wishing me success. And that dealer of course knew nothing about me! You needn't say you don't believe this. It is literally true. I paid him as I was able, and years afterward, when I had removed to a remote field, I continued to deal with him until he went out of business, for I never forgot his kindness.

My first patient was the barber's widow. She came on the first day. I filled for her four cavities, with amalgam, and got the \$6 fee I charged, on the spot. The lawyer who had been sitting at his desk furtively watching the procedure, turned green with envy. I saw that in his face which suggested a determination to raise my rent, and sure enough, he did promptly, at the earliest opportunity. However, I didn't say much by way of protest. We had no other expenses, as we kept no office boy, and never swept or dusted.

The first month I made \$32, all by amalgam filling and extracting. My associate in the office was by this time saying less about the dignity of the legal calling, and more about the advantages of professions which yield prompt money returns. What that man lived on I am at a loss to say. During the twenty months of my stay with him, he had only two paying clients, and his receipts were just \$19. I heard afterward that he learned the cooper's trade, which in that town paid from \$2 to \$4 a day.

During my second month a young man came in who wanted four incisor cavities filled with gold. I had filled several teeth with gold while in college, that is to say I had assisted one of the seniors to adjust the dam, and had malleted for him. It seemed to me then that he made a stupendous fuss about filling those teeth, and I felt sure I could have done it in one-tenth of the time. So with a profound contempt for those fellows who can't do a little trick like filling a tooth, without straining their flexor-carpi-radialis muscles, and going to bed with a fit of nervous prostration, I set to work. I cut four slits in my dam and tied it on with thread.

Every time the man coughed a bubble as big as a hickory nut was liable to bulge out through one or another of the slits.

I wasn't to be disturbed by trifles, however, so I let them bulge. They interfered only slightly with my view of the cavities and I had other more important details to look after. After several failures to make the gold cohere (I had forgotton to anneal it), I got out the only book I had, Taft's Operative Dentistry, opened to the chapter on filling teeth and proceeded at one and the same time to imbibe and practice its precepts. I also lighted my coal-oil lamp and carefully annealed my gold by holding it over the chimney. You needn't laugh. I saw a city dentist annealing foil in a gas flame, recently. But in his case, as in my own, the gold wouldn't cohere worth a co-huss.* By dint of seven hours of pounding, punching, wedging and sweating (during which I am not sure that I succeeded in refraining from heterodox expressions occasionally, for some very good men in moments of trial use extravagant language merely as a form of protest against Pharisaism), I say, then, that I at last got the cavities filled. To be sure, the fillings presented a somewhat scooped appearance, as also did the patient. But I concluded that they would probably stay until I got ready to move. The young man paid me the ten dollars previously agreed upon, and, after having expressed himself in fervent terms respecting my manner of handling his person, went away. Then I charged up \$700 in my ledger, representing the value of my day's service, and \$10 on my cash book. The first memorandum was to assist memory and imagination when I should find time to write home and report progress in acquiring business; the second record was for strictly private reference. I have always, since that time, adhered to the practice of keeping my ledger and cash accounts widely separated in case any over-inquisitive professional friend should demand substantial confirmation of statements I may see fit to make about the growth of my business.

In the course of three or four months I found myself in receipt of a monthly income running from \$40 to \$75. One month I made \$130 nearly. I had to buy a pocket book. The railroad telegraph operator and express agent, who in summer wore white flannel suits and was quite a swell, began to nod to me. I bought a horse and when business slackened, as it frequently did, I mounted him and rode about the country filling teeth, making plates, and spread-

* Copyright on this joke applied for.

ing far and wide the infamy of dentists who travel about extracting teeth. For by dint of perseverance and study I had become a tolerably fair dentist. I now annealed my gold by means of an alcohol lamp made out of an ink bottle with a pen barrel driven through the cork. It served my purpose quite as well as any two dollar lamp would have done, though it was not very pretty.

But I was not to remain in undisturbed possession of this rich and productive field. A graduate of a western college located not far from me, a man whose articles I have frequently of late seen in print in the Review. He denounced me to my face for using amalgam. I think we must have swapped opinions of late years, for recently I saw an article from his pen advocating the use of this material.

And now in conclusion: as I look back to those days of unutterable wretchedness, everything about them appears rose-tinted. I smile when I think how many bridges I crossed before I came to them. And I realize now how invaluable was the lesson of self-reliance I learned. And when I came away I left behind me a circle of warm-hearted friends, some of whom had lent me a helping hand when I needed it. But ultimately I paid my way in full, saving enough besides to carry me through the dental college. Dentistry is not usually a fortune-making profession, but it stands in the front ranks of the callings in which he who engages may go off among strangers and make his way with more than the average degree of certainty. And now as I look down from the dizzy heights of my present position and recall those hours of distress and anxiety, when as a stranger among strangers I frequently found myself with only \$1.35 between myself and poo—that is to say—reduced circumstances, I am inclined to disdain the fear of adverse comment by which some might be lead to sign a fictitious name to such a production as this, and subscribe myself,

Yours very faithfully,

FRANK W. SAGE.

LETTER FROM NEW YORK.

To the Editor of The Dental Review:

DEAR SIR—To say that enthusiasm was at high-water mark at the monthly meeting of the First District Society would not be an

overstatement. It came out of the report of the executive committee, calling the society's attention to the editorial in the December number of the *Cosmos*. They inferred that it directly aimed at what might be a violation of the code of ethics by the society in that they had unthinkingly endorsed in their clinical reports a patented article, called "Dorsenia," and the company controlling this article had copied it from the published report and placed it in their circular, which circulates an inaccuracy, for in this circular it is stated that this article can be used indiscriminately, by any and all, with safety. In fact, all the society report did conclude was this, that it proved a success in this individual trial at the clinic. Simultaneously with this discussion, which had put all on the *qui vive*, Dr. Carr offered an amendment to the by-laws which took an additional turn of the already tense strain of codified ethics. It was in letter and spirit to this effect—viz., a direct aim to discount any and all that have anything to do with the taking out of patents as ineligible to membership.

It is plainly indicated by conversations since the meeting that this step will not be taken without a good deal of thoughtful consideration, for it is a question on which the profession is largely divided. This is also said in the editorial of Dr. Kirk. We are not sure that the new by-law was brought up in the interest of a test at this particular time. It is matter that thoughtful men who have the true interest of the profession at heart can afford to let go into legislative action without protecting themselves from the aspersion of establishing a surveillance. In the future our legislation must try to keep a healthy organization and make laws that have in them the principles of health. We say that this editorial sounds a note of attention, and we agree that the point making a distinctive difference between those who secure legitimate patents and those who secure themselves by law in their protection of nostrums, as a good point taken. We are sure, by a known feeling which does exist, that associations will not rest on a sound basis until this internal question is fairly settled, so we predict that the action of the First District Society will be waited for with much solicitude.

This society ought not, in view of its large influence, and cannot afford to give a note of uncertain sound.

The subject of the evening was Plastic Fillings. Although the author was Dr. Line, of Rochester, it was not conceded to be a

very commendable effort, possibly it was in purpose, but not in value. Yet there may be those who will see something worthy of larger attention than it seemed to attract when read.

No one discussed it but Dr. Keese, of Williamsburg, Brooklyn. E. D. Keese of metal fame. The doctor has given much attention to the mixture of gold and amalgam with phosphate fillings and has claimed that they had a degree of virtue worthy of attention. He has pursued this method over a period of six years. It has been denominated as an amendment of the "New Departure System." The clinic was attended by 108, visitors included. We met Dr. Chambers, formerly of Delphos, Ohio, who is to settle in Chicago in January. If we do not misjudge his looks, he will be a creditable addition. He has been spending a few weeks in New York getting all the good points, particularly in porcelain bridges. His work, which he exhibited to us, speaks for itself. He is about thirty years of age and has a young wife with him. It is our opinion he will be heard from later. From personal acquaintance and hearsay, we think Chicago is attracting a wide awake class of practitioners. Why not? Chicago is, in our estimation, more like New York than any other city.

We have exhibitions of a fine demonstration of bridge work, twenty teeth in both the lower and upper pieces. It had been in active use for a period of eighteen months. It was commended on all sides for its beauty of fine workmanship and the extreme health and cleanliness. It was a credit to the operator. We saw also some fine crown and proximal fillings of Wolrab gold, placing unannealed gold at all the borders and cohesive in the remainder, also a new preparation of sponge gold, both in method of preparation and form.

Dr. Oliver exhibited a new invention for blast air force, both for soldering and chip blowing. A fully equipped apparatus with electrical power for offices.

An exhibit of mat sponge gold was a new article. Also another invention of a cervix clamp. We are certain that nothing has struck us so favorably. It is truly a time saver; humane and quickly adapted. Cut a hole about one-third the diameter of the tooth and sheath without the least difficulty over the clamp pins and the opposite end and it will adjust itself to the lateral form of the tooth and without any necessity of placing it between the teeth. The whole time in applying need not exceed one-half of a minute, and

all with absolute comfort. The latter feature is an invaluable one.

The bimonthly Jersey meeting, at Newark, met with a liberal attendance this month. The supper's always good, and music, ditto.

Jersey is ahead once more. A new thing in the scientific world was brought before the body. Dr. Watkins took the first bottle as a test and if it is a success with him, that settles it. It is claimed a complete renovator and removes all the ills of the body, and indirectly the immoral tendencies will change. At this juncture we saw some significant books. "Biozone" is the term as it now stands. It is formed of a new invention called the "Liberator;" to this is added a preparation of peroxide of hydrogen, raised to a temperature which can readily be inhaled by the aid of an inhaler shown, simple and new. In the process of inhalation, atmospheric air is added through the lungs and the bodily conditions are met by the tonic effect formed by the combination.

The Professor's language was exceedingly scholarly and given in an unusually understandable manner. The lecture was very instructive. The speaker guaranteed that he has a peroxide of hydrogen which will not deteriorate from one year's end to another.

The Jersey boys showed some smoky legislation. They brought in a report from the executive committee abolishing cigarettes from their menu, which was carried with an amendment to have cigars. This does not seem to meet with the wishes of those who demur against smoke in any form from tobacco. More harmony is better than more smoke and more profitable we think. They don't want to end in smoke. Dr. Stockton being absent that evening, was present in spirit by sending one of his persuasive orations in behalf of the nonsmokers.

The annual meeting of the Odontological Society selected Dr. C. A. Woodward for President, and Dr. A. H. Brockway, of Brooklyn, for Vice-President, the latter a reelection from last year.

Here, as elsewhere, the identity of the noted dynamiter of financier Sage, by the record of dental operations has emphasized the importance of keeping such means of identity. The record of nine fillings, by the Boston practitioner, virtually settled the question of doubt. It may be recalled, also, that by the same means Mr. Robert Ray Hamilton's remains were recognized, by fillings placed by a New York dentist, and if possible to make it more

fully definite, a memoranda of the bill and date of work was found on the person of Mr. Hamilton, which corresponded with the dentist's record. It would be hardly probable that any operations of a skillful operator would fail of recognition.

La grippe is paying its respects among us again. The author of this letter is writing under reduced energy, because of its hold on him for ten days; we thought, for some time it was one of our occasional bilious headaches; for four days our appetite dropped off and then gradually returned and finally we were forced to acknowledge the grippe, because of the loss of the strength which did not come with the returning appetite. Thus absence from the office was of but two days' duration, but we have stood at the chair when not able to. We have taken no medicines, but have slept much and have clothed ourself warmly and carefully, avoiding all violent exposures. Being organically sound we trust ultimately to pull up to the basis of sound health. This calling is not necessarily a dangerous one for health, although at twenty-three years of age we were counselled not to choose the avocation because of a supposed tendency to pulmonary troubles, but here we are in our thirty-eighth year of practice, yet the last surviving member of a family of eleven, and with a family of our own numbering eleven—only five living. We feel a little shaky now and then, yet our desire and belief is that we will pull up to our 50th anniversary of practice, for let it be known that, not until then, does one get an honorary banquet—"a good square meal"—and listening to one's obituary, is of more uniqueness than the usual occurrences of this checkered career of a "down in the mouth pilgrimage."

This will do for Christmas Eve, and we will only add that we had a full stocking and a few presents from G. P.'s grateful patients. All has been merry with us and we trust it has been the same with all the readers of the REVIEW.

The serious illness of Mr. Lyman Gage, at the Holland House, has enlisted much interest among our fraternity in this city, yet at this writing, we are informed by the press, that his return to health is assured. I may not need to tell the readers of the REVIEW that Mr. Gage is the treasurer of the Dental Protective Association funds. Mr. Gage came on to New York to attend the dinner of good will given by New Yorkers, in evidence of the World's Fair interest. Mr. Gage was taken ill en route and reached New York in a serious condition and was soon compelled to undergo an operation for

appendicitis. Hearty congratulations will be most cordially accorded Mr. Gage when he is up and out again. Our daily press has been fertile in high encomiums of his unblemished character. We trow that our Columbian Congress committee will forge a link of good will during their visit to Chicago, in January. It is expected that after this, the second session of this body, things will begin to take shape. We hear the sighing of breezes about us and not all are musical in tunes. We have thought of suggesting a "loving grip" in that part of the country for we are far from being harmonious.

The editorial on pyorrhœa alveolaris is accorded a timely and common sense view of the subject. Is it not strange that the very frequent question is asked: "Do you think this disease curable?" The answer in the editorial is so pat we do not need to repeat it, and we only emphasize it and say that such questions are evidences of a prevailing lack of knowledge of the subject. Eleven years of continued enthusiastic experience in treating a large variety of cases leads us to say this of the editorial. We could add much testimony in favor of this all important branch of practice, which is so largely neglected and what is far worse, the public are informed that the disorder is *not* amenable to remedy. I say this, based on personal information which is spoken in our office daily. What do these facts suggest?

How shall the public be educated? is a question that is hardly being answered.

In reference to the direct question, asking for discrimination between the suppurating conditions *versus* nonsuppurating, our answer would be—the first is associated with hypertrophied conditions or of excessive nutrition; the second, with atrophied or lack of nutrition. This to us seems plain and we give it as a nutshell expression. For further delineation it would require an article.

What is that joint committee on publication doing? We think the public are ready for the truth certainly as soon as they will get it by such means, although we are heart and hand with this committee in all they may be able to do.

New Year's day passed very pleasantly, judging from the unusual numbers of promenaders on the avenue. The day was fine and all classes were out in their gayest attire. It was noticeable by one familiar with New Year's day for many years. The procession has changed from the highly decorated gents bent on a full list of

calls. This year it was in every sense a gala day for any and all. The earlier customs of open house and fine feed are but in remembrance. 1892 has opened to us an avenue of opportunity, and by the time the knell of '92 has sounded it will have appeared what our contribution promises to be for the great Columbian Dental Congress of '93.

We wish the readers of the REVIEW all a Happy New Year.

"May they all live and prosper."

Ex.

REVIEWS AND ABSTRACTS.

LYSOL—THE CRESOLS AS DISINFECTANTS.

The first question suggested by such a title is naturally, what are the cresols exactly? In order to answer this it is best to go back to the beginning and to start with coal tar, the product (with coke and illuminant gas) of the dry distillation of coal. By fractional distillation this coal tar is separated into parts, having various boiling points, principally as below:

1. A small fraction (amounting to two or four per cent. of the tar) containing what passes over at 80° C., namely;—ammonia, carbon bisulphide, methyl cyanide, alcohol, amylene, benzene and its homologues.

2. The light oil; forms six to eight per cent of the tar, and includes the constituents boiling between 80° and 210° C., chiefly made up of benzene and its homologues, with some naphthalene, phenols, and bases.

3. The heavy oil; thirty-two to forty per cent of the tar, this is made up of what goes over between 210° to 400° C., and consists of naphthalene, phenols, high boiling bases, anthracene, phenanthrene, fluorene, and other hydrocarbons.

The residue in the retorts represents—

5. The pitch; in quantity of from fifty to fifty-five per cent.

The heavy or creosote oil on cooling deposits solid naphthalene; the separated oil is treated with concentrated soda lye, the insoluble part separated from the dissolved sodium phenol, and the latter decomposed by sulphuric, carbonic or sulphurous acid. Crude carboic acid rises to the surface of the solution of sodium sulphate, carbonate, or sulphite. By fractional distillation of this crude acid between 185° and 205° C. cresols are obtained, which

appear to consist of a mixture of the so-called ortho- and para-cresol, and have the general formula $C_6H_4CH_3OH$, from which it will be seen that they are carbolic acid, or phenol (C_6H_5OH), in which one hydrogen atom is replaced by a methyl group, CH_3 . What a difference in some physical properties this replacement of an atom by a group makes we shall see presently.

Orthocresol, or orthotoluidine, melts at 31° C. and boils at 185° to 186° C.; metacresol is a thick liquid that even at 80° does not solidify, and boils at 195° to 200° C.; para-cresol occurs in colorless prisms, melting at 36° C. and boiling at 198° C. They are all practically insoluble in water.

Lysol, which is obtained by dissolving in fat, and subsequently saponifying with the addition of alcohol the fraction of tar oil which boils between 190° and 200° C., is a brown, oily-looking, clear liquid, with a feebly aromatic creosote-like odor. It contains fifty per cent of cresols and is miscible with water to a clear saponaceous, frothing liquid; it also forms clear solutions with alcohol, petroleum or benzene, chloroform, carbon bisulphide, and glycerin.

The essentials of a perfect ideal antiseptic may be briefly stated as follows:

1. It must be soluble in water, and ought to be clearly so.
2. It must arrest the development of pathogenic bacteria, even in very dilute solutions, and after a comparatively brief period of action.
3. It must be harmless—that is, nonpoisonous and noncorrosive.
4. It must not be too expensive.

Lysol meets these requirements.

It forms clear mixtures at once, in every proportion and at all temperatures, with distilled water or ordinary well water.

The mixture possesses—and therein lies a prominent advantage of lysol—the property of a saponaceous solution, which renders the use of a special soap in surgery quite unnecessary. The generally complicated processes of cleaning and disinfecting the area of operation are completed in a single act,—viz., an energetic brushing with the solution of lysol. It acts in a manner equal to the best soap as an excellent cleaning agent, which removes all dirt, fatty or resinous spots, etc., from the skin as well as from the surroundings, linen, instruments, and the like.

Lysol is superior in bactericidal power to carbolic acid and other preparations of the higher homologues of phenol, and is possessed of powerful deodorizing properties.

Lysol is neutral. In alcoholic solution phenol-phthalein produces no change. In aqueous solution a reddening appears, but this is traceable to the recognized dissociation of neutral soaps under such circumstances into acid salt and alkali. It is also free from poisonous properties—the relative harmlessness of the cresols even when taken internally in large quantities has been often demonstrated—and is noncaustic. The mucous membrane is unaffected by the application of a one-half per cent solution, and though stronger concentrations produce a more or less pronounced sensation of burning, this disappears on the application of a little plain water.

Lysol has been introduced into a number of surgical, and particularly in lying-in clinics, from the experiences of which it has been concluded—

1. That through its simultaneous cleansing and disinfectant action, in conjunction with its relative nonpoisonousness, lysol is superior to the disinfectants commonly in use.
2. That its application is more convenient and less dangerous than that of any of the other agents of the same class.

As has been already intimated, lysol has been largely and satisfactorily used in midwifery, for irrigation of the uterus and vagina, and in gynæcology generally, where its powerful deodorizing properties prove of the greatest value.

In surgery generally it is being extensively adopted in one and two per cent solution for the disinfection of the operator's hands, of the field of operation, of instruments, sutures, etc., and for irrigation of wound surfaces. Amputations, extirpations of various tumors, operations for hydrocele and hernia healed in the most satisfactory manner, and partly by first intention.

Dr. Unna has used lysol in various skin diseases in the form of a plaster mull, and was favorably impressed with it; he classed it among substances which do not produce pain. It will prove valuable in the treatment of rhino-pharyngeal and laryngeal diseases, as well as in affections of the middle and external ear. In short, the application of lysol is indicated wherever any morbid processes associated with the formation of pus and other disintegration products are going forward. It should also be tried in skin affections,

especially eczema, or such as are of parasitic nature, and in the treatment of burns and wounds generally.

Lysol forms an efficient general disinfectant. The walls of a room, and the dwelling generally, may be freed from germs by the intelligent and thorough use of a spray containing a one to three per cent solution. It seems likely that lysol may become a permanent institution in the household for the purpose of domestic cleaning, the disinfectant of sputa, etc. For such uses its saponaceous character and perfect solubility in water again manifest themselves as not the least important among its many advantages over other substances of the same class.—*Pharmaceutical Record*, November 12, 1891.

RESORCIN THERAPEUTICALLY.—By Alfred Eichler, M. D., San Francisco. *Medical and Surgical Reporter*, 1891; No. 5.—Resorcin, if exposed to light or kept in a moist place, will soon acquire a reddish tinge, but it does not lose its activity. It is soluble in water and alcohol, also in ether. Solutions assume on standing a darker, whiskey-like color, *without any impairment of their activity*. In very concentrated solutions it acts as a mild caustic, if applied to mucous membranes; it does not irritate sound skin, however. When sufficiently diluted it seems to have a soothing effect on inflamed surfaces and also on the mucous membranes. Internally it may be administered in doses ranging from two to fifteen grains.

Resorcin is to be preferred to carbolic acid in all instances when the latter proves too irritating. Consequently it is especially useful in all affections of the mucous membranes; it is then used in aqueous solution, largely diluted. A three to five per cent solution is mostly preferred. In catarrh of the posterior nares and of the pharynx it is found to be an excellent application; it is also useful in all affections of the upper air passages. A good formula is presented by the following:

Resorcin.....	2 drams.
Sodium salicylate.....	1 dram.
Sodium biborate.....	1 dram.
Glycerin.....	2 fl. oz.
Water.....	enough to make 8 fl. oz.

Use freely three times daily.

This solution will soften and bring away all hardened secretion, relieve the congestion and lessen the usual discharge. For thus

cleansing the naso-pharynx a posterior nares syringe should be used instead of a nasal douche, which, in unskilled hands, is very likely to create mischief, that is, inflammation of the middle ear. In many other affections of the air passages does resorcin give great relief. Whooping-cough, asthma, bronchitis and laryngeal ulcers are benefited by it. It is especially valuable in chronic ailments of this kind; it is of less use, however, in the acute affections—like croup and diphtheria. It should be applied in diseases of the throat with an atomizer or inhaling apparatus. A five to ten per cent solution will serve all purposes.

Resorcin sometimes acts charmingly in other diseases of the mucous surfaces; it is an excellent injection in all stages of gonorrhœa, although it here also produces more benefit during the latter stages; in inflammation of the neck of the bladder it may also be employed. From two to five per cent solutions will be the proper strength to use.

The *internal* use of resorcin is chiefly limited to producing its antifermentative action. In gastric and intestinal catarrh, dilatation and ulcer of the stomach, and in all those diseases where gases are produced in the alimentary canal, its use is indicated. *Impure resorcin is said to occasion vomiting*; but, according to Andeer, *pure resorcin is one of the very best and most certain remedies against vomiting*, and he says that it will prove efficient in all possible forms of vomiting—as in those caused by pregnancy, kidney and liver diseases, also by sea-sickness and after excessive eating and drinking of alcoholic liquors. The doses as applied by him range from five to forty grains. It is most conveniently administered in capsules.—*Merck's Bulletin*.

PAMPHLETS RECEIVED.

Annual report of the Postmaster-General of the United States, for the fiscal year ending June 30, 1891. Washington; John Wanamaker, Postmaster-General, Government Printing Office, 1891.

PRACTICAL NOTES.

PRACTICAL NOTES.

DENTAL EDUCATION.

SYMPOSIUM THREE.

BY A. C. E. AND F. (B. AND D. LEFT OUT).

A.—From a somewhat lengthy editorial in the *Southern Dental Journal* for November, we extract the following: "The dental profession is fast becoming great, and we need men to work in various capacities. We need leaders, teachers, writers, inventors, investigators, and so on, until the list could be extended illimitably. But if I were asked who of all the different classes named or unnamed was doing the most good from a philanthropic standpoint, the answer would be the modest practitioner who is seldom heard from, reads one or two journals, attends his State society, and quietly pursues the even tenor of his way, relieving suffering humanity by practicing his profession intelligently and conscientiously."

The exception I make to this, is that there would not be a modest, unassuming practitioner pursuing "the even tenor of his way" if there were no teachers, inventors and investigators, and it is no great credit to him to be pursuing "the even tenor of his way" by absorbing everything and giving out nothing.

F.—Almost any one can absorb the thoughts and ideas of others, and such a man is simply an absorber, and not a producer.

A.—What is the particular influence that such a practitioner exerts upon society? What standing does he give to the profession? In what way is he doing more good than the men who are engaged in reforms and in the establishing of higher standards of education?

E.—Such a man is simply a sponge. He is absorbing, and giving nothing out. The influence he exerts is simply for the laity. He may perhaps benefit the standing of dentistry somewhat by the influence that he exerts over his patients and the people he comes in contact with, but he certainly does not contribute anything to the profession itself. No good comes back to our societies from him. He is simply a parasite and his growth is parasitical.

F.—It would seem to me that the influence that such a man exerts on either general society or the profession is very little.

C.—A. means the value of the man to the community in which he lives and the influence he exerts upon the people with whom he associates, whether it is superior or inferior.

A.—This is only one phase of dental education, which is really the topic we want to touch upon. But the whole tenor of the editorial is to this effect, that there is now and must always be a field for what the writer calls "medium capacitated men." We must recognize, of course, that in all professions there are the rank and file who give respectability or cast disrespect upon the profession, and if the "medium capacitated men" so largely outnumber those of talent or habits of study, or industry, or great intelligence, the whole profession must be judged by the "medium capacitated men" instead of the others.

C.—Let us take a practical view of it. We see men go to the State societies who probably never throughout the year associate with any other dentists, and if they read a dental journal or two you may depend upon it that the journals are of the inferior kind. They do not have enough friction or association with other dentists to comprehend a good article. They can read little articles on how to prevent the teeth and joints from discoloring and grasp those things, but they cannot go beyond them. It is simply impossible for a man to limit himself within such bounds and be able to do good work in the community in which he lives. There are notable exceptions to this rule. For instance, I know of a man who perhaps does not read a dental journal; I know he does not attend any society, yet he is a fine operator. He is a mechanical genius. He cannot do anything beyond absolute mechanical work. He is not doing as much good to his patients as he could if he were to take a more active interest in reading dental journals and attending society meetings. He is doing no good to his professional brethren whatever. I think a man whose aims are mediocre never reaches the position he thinks he occupies.

E.—Very many men deceive themselves. They are honest in their opinion, and they think they are good professional men, when they are badly mistaken. The reason for their belief is simply that they have nothing to compare themselves with. They do not come sufficiently in contact with any one else who could possibly enlighten them regarding certain subjects.

A.—That is true, and they are the men who skip an article in a dental journal that has the appearance of being scientific or is

based upon experiments or anything of that sort. They turn to the advertisements first, if they ever happen to see a journal.

E.—The reason why low grade journals are so popular is because they contain little short articles and bits of news that are oftentimes far from being scientific. They are simply little squibs and cuttings.

C.—Yes, and they are oftentimes incorrect.

E.—There are a few bright men in our smaller towns. They read, but oftentimes are not heard from in our societies because of diffidence. They have not come in contact with dentists often enough to be able to trust themselves on their feet to take part in discussions. It is true that some men have very good ideas, perhaps better ideas than those wordy speakers who are universally on the floor, but on account of diffidence they are incapable of giving expression to the thoughts and knowledge that they possess, which would prove of value to others. The city dentist who comes in contact with other dentists, who attends societies frequently, has a wonderful advantage over those practitioners in the country who perhaps attend a society only once a year or not at all.

A.—Yes, that is true, but there is nothing to prevent such men from writing if they have good thoughts or knowledge to impart to their fellowmen.

E.—Some men write a good deal, but they do not do much talking.

A.—But they do not write such matter as will show that they are profound thinkers. Their articles are too brief and are lacking in original thoughts or ideas. They write too many text book short articles. Half of the articles we read on the development of the teeth, and on the care and treatment of deciduous teeth, etc., are borrowed or taken from the productions of other writers and simply recast, and whenever I see an article of that kind, unless there are illustrations or tables accompanying it, it does not appeal to me. It is some old stock article that has been going the rounds of the dental journals for years.

C.—Do you know of any men within the last twenty years who have made themselves prominent in dentistry, except as teachers, investigators, inventors, industrious writers connected with dental journals or societies?

E.—Very little good can come from a man who is not engaged either in teaching, experimenting, writing, or who does not attend

dental societies. These are the only avenues through which he can make himself useful. If he does any good at all, he must do it through one or the other channel referred to.

A.—If he pursues “the even tenor of his way,” he is lost to sight.

E.—He certainly knows very little about what is going on in the profession.

A.—It is simply a little circle that he impresses himself upon according to the performance of his daily operations ; and when he dies they simply say *requiescat in pace*.

F.—This is a new phase of dental education for me, and a very important one. A large majority of dentists are vegetating, they are neither giving nor taking, simply because they do not have such opportunities as we have in cities of getting together. If they could organize societies, read papers and discuss them, it would be the means of doing a great deal of good not only to themselves, but to the profession.

C.—Let us take the West as an example. Most of you have attended Western dental societies, and you will find how many men there are who read dental journals and attend meetings. Only a few seem to be interested in society proceedings, and those gentlemen are the ones who have written for our dental journals, and we hear of them in that way. Take, for instance, certain States, and I do not believe there are more than a dozen men in them that amount to anything in so far as they have added to the stock of knowledge of the profession.

A.—It is not permitted for all men to be great. Every man however, is permitted to do something toward the betterment of his profession to compensate in a slight way for the knowledge that has been gathered by others in times past, which he has acquired in such a short time during his college education, for instance, and if he does not compile, invent or investigate something, or present a new thought or do something to keep up societies, or become a teacher or editor, just the mere fact that he is performing operations on the teeth from day to day is not a sufficient excuse for his existence. That is the way I look at it. If he does rise above a mere money making machine, who goes to work at 8 o'clock in the morning and keeps it up until 5 or 6 at night, year in and year out, he is just like any ordinary mechanic. He is not a professional man at all, because to be considered one he has

to contribute something in some way that will show that he is not inappreciative of the facts, discoveries, and great labors of all the men who have preceded him.

C.—You think then, that there is not a man practicing dentistry in the smallest village but what can in some way do some good to the profession through one of the channels mentioned.

A.—I think it is the duty of every man to do something. He must keep himself in touch with the inventions and discoveries, otherwise he is not fulfilling his duty to the community in which he practices, whether he lives in a great or small city, a town or a hamlet.

E.—We have a great many men who make considerable noise. They attend societies, they do the greater part of the talking, but contribute no more than those men of whom you are speaking. They are not dental educators in the smallest sense.

A.—That may be so, but they help to keep up society organizations, and these are good things for the dental profession at large. If we do not have an organized dental profession in every state, city and district where a sufficient number reside, they become apathetic, and the practice in that community will be of a low order. Is it not a fact that there are more unheard of operations, and particularly well performed operations of various kinds in communities where the people have been educated up to feel the need of such work—artistic dentures and beautiful crowns made in the most substantial manner, the kind of bridge work that will not spoil the teeth in a few months, and the kind of root filling and various other operations I need not mention that become a necessity? But if the men who are located in that community are all asleep, do not attend societies, do not contribute in any way of their stock of acquired knowledge, they do low grade operations from day to day, and so they get the credit of being in the rear guard, and that is where they belong.

F.—What do you propose as a remedy?

A.—I had not thought of the particular form of remedy, except this, that in the dental schools where there are so many students, it is the duty of every dental teacher to impress upon them the necessity of allying themselves in some way with a dental society and becoming subscribers to dental journals, and possibly a medical journal or two, so as to keep themselves informed in a professional way. Get them started, and then if it happens that there are ten

or a dozen men residing in a region where it is not thickly populated, say ten, twenty, thirty or forty miles apart, it is a good thing to have a local society that meets once in three months for the purpose of showing the members what they are in the habit of doing. If they do not do that, they inevitably fall to the rear. They must do it.

F.—If such men were encouraged and stimulated to take hold, I think we would be surprised at the good that could be done, not only to individual dentists, but in other ways.

A.—Look at Chicago. For many years there was but a single dental society, and the membership did not exceed fifty or sixty up to probably 1880. Since that time there have been four other societies organized, and they have pretty generally full meetings and have succeeded in drawing a great many dentists into them that a single one could not do. If one society is not sufficient in a large city, there ought to be two, or three or four, and they ought to be rivals in the sense of doing the very best kind of work. That is the only kind of rivalry that should be acknowledged or fought for or obtained. Every society has to live on its own merits, and if it does not produce good papers and good discussions the publishers of dental journals do not care to publish its proceedings. If that sort of generous and friendly rivalry exists, we will have such a mass of valuable material that our pages will not be large enough to hold them.

E.—I think the value of local societies is underestimated for the good they have done. I have associated with them considerably, and have known them since their birth.

A.—You were on a committee that first organized the district society of the State, were you not?

E.—In the annual address as President, I recommended that it be done, and a motion was made to that effect, but whether I was on that committee, I do not know. I have seen when I have attended these district meetings ability exhibited by men from small towns that surprised me, which shows the good that is coming from the schools. We do not find such dentists in the little hamlets. There were no dentists in those places in years gone by, but now nearly every town in this State and adjoining States of 500 or 1,000 inhabitants has a regular dentist, and many of them are graduates of schools, and many of them subscribe to journals who read them. Many of them have not gotten into the State societies for some rea-

son, I do not know just why. Probably they will join the State societies later.

A.—They can grow up to that though.

E.—Within the past two or three years men who are members of the district dental societies have been coming into the State societies; and men who have never attended State societies, who have been practicing for years, have become members of local societies and gradually worked themselves up. We see this from year to year. We are discovering men of intellect in the country who are fairly good educators.

F.—Is there any better way than for the State societies to take hold of this matter? The States should be organized. Of course it takes time and money to do it, as well as energy and push; but if each State was organized so as to reach nearly all the dentists in the State, it would result in incalculable good.

E.—It has been done.

A.—It is being done in a good many States. It is a good thing, but the way in which to do that is to let men run their own societies instead of importing talent from other districts. It is much better for them to get started and rely upon themselves, then they take a personal interest in their work; if they have a protecting arm around around them, they begin to feel as though they did not have proprietorship in the society, consequently they lose their interest in it. When you put the responsibility on a number of men, if in earnest, they are generally equal to the emergency.

F.—My idea was to have local and district societies organized, and then see that they were kept going. I think they have organized the State of Ohio on this plan.

A.—They have several district dental societies in Ohio, and in New York, by an act of the legislature, there are eight district societies. In Iowa they have district societies, and also in Indiana. In Illinois there are four at the present time, the central and western having united.

C.—It is strange, that out of 1200 dentists in Illinois only 160 are members of the State Society.

A.—That brings us back to the original proposition, that if there are only 160, or say 260, men interested in dental societies in the State of Illinois, the vast majority of those remaining must be absorbers, not contributors, and to be an absorber is not the best position for a man to be placed in. What we desire and what we

hope for, is that the absorbers will begin to contribute through some one of the channels that have been previously mentioned.—*Excunt Reporter.*

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To the Editor of the Dental Review:

DEAR SIR.—In filling two adjoining approximal cavities with gold it has been my custom for years to fill the posterior approximal cavity of the anterior tooth first and then the other. For instance, if I have to fill a posterior approximal cavity in an upper first molar and an anterior approximal cavity in the second molar adjoining, I always fill the cavity in the first molar first and the cavity in the second molar afterward. In conversation with a number of professional friends, I learned that the universal custom among them was just the reverse of this procedure. What is the usual practice in this particular, and why is one method preferable to the other? Will some reader of the REVIEW please reply and oblige one who after knowledge is

A SEEKER.

January 5, 1892.

MEMORANDA.

The Michigan Dental Law was amended in 1891.

Chloroform water may be used to disinfect instruments.

Dr. J. D. Patterson took a look at the World's Fair city recently.

Dr. W. X. Sudduth, of Minneapolis, paid a flying visit to Chicago this month.

Dr. Joseph Head is to be Associate Editor of the *International Dental Journal*.

The *British Journal of Dental Science* published 1,149 pages of reading matter in 1891.

Do you use amalgam dies for inlay work? If not, try copper amalgam or some other variety.

Look out for the impecuneous dentist who wants to borrow a dollar or two about this season of the year.

The Mississippi Valley Association of Dental Surgeons will meet in Cincinnati the second Tuesday in March.

A GRIM PLEASANTRY.

A London dentist about the middle of December hung out the sign, "Have your teeth pulled out for a Christmas present."

Dr. H. A. Smith, dean of the Ohio College of Dental Surgery, spent a few days in Chicago during the holidays.

Oil of wintergreen is again recommended in acute rheumatism ; five drops on a lump of sugar four or five times a day,

"Teeth filled while you wait" is a sign displayed in an American city. Wonder if the dentist "waits" for his fee ?

Clinical teaching, wherever practicable, must take the place of didactic instruction, preferably in division of classes.

Dr. W. H. Whitslar, of Cleveland, Ohio, was a recent visitor in Chicago. Dr. Whitslar is the Dean of the new dental college in Cleveland.

From recent investigations, eugenol takes high rank as a local anæsthetic and disinfectant. It cannot be discarded from the dental medicine case.

James Charles, for many years a dentist of Omaha, Neb., committed suicide at the Hotel Brewster, in Chicago, January 6th. No cause for the deed is known.

M. E. Lecaudey has been named an officer of the Academy in France. M. Lecaudey was the honorary President of the First International Dental Congress.

Il Progresso Dentistico is a new dental journal just issued in Italy. Editor Dr. Platichrick. Monthly organ of the chair of odontology in the University of Pavia.

Dr. John H. Spaulding, formerly of Minneapolis, who is practicing dentistry in Paris, has been appointed one of the professors of operative dentistry in the Dental School of France.

Dr. W. C. Barrett assumes the editorial mantle this month. He will act as editor of the *Dental Practitioner and Advertiser*, of Buffalo, one of our valuable quarterlies, price one dollar per annum.

The Illinois State Dental Society will meet in Springfield the second Tuesday in May, 1892. It is not too early to begin preparations for this meeting, as President Taggart expects a large meeting of his fellow countrymen.

It is unprofessional to endorse nostrums, especially secret local anæsthetics. How dare you inject even a minim of a secret pain obtunder, or use a poisonous preparation the ingredients of which you do not know nor the quantity of each?

SERVED HIM RIGHT.

A dentist in Aix-la-Chapelle has been sentenced to nine months' imprisonment for pulling out all a woman's teeth while she was under anæsthesia. She wanted only one pulled.

Very recently we discovered a cavity on the root of a living cuspid tooth about midway between the gingival margin and the apex of the root. The gum was not receded and there was no disease of the peridental membrane. After vainly searching for the cause of pain, a fine probe was passed between the cementum and the pericementum on the labial aspect and the cause of the pain was discovered. The tooth had been giving trouble for three weeks. What caused the cavity ?

Three new phosphate companies have recently been organized to develop and work the phosphate beds in Florida. The capital stock of these companies aggregate over \$4,000,000. Many plants are now in operation and will turn out 250,000 tons, nearly one-fourth of the world's product.—*N. Y. Globe.*

The influence of food upon the rate of formation of carbonic acid has been made a matter of study in France, and it has been found out that during the first hour after a meal the quantity of carbonic acid exhaled increases till it reaches a maximum, three or four hours after the meal, when it falls off again. Plenty of fresh air is desirable from one to three hours after a meal.

Dr. L. P. Haskell, who established the first post graduate school of prosthetic dentistry, has removed to 211 Wabash Avenue, Chicago. Dr. Haskell's school is open the entire year and students may enter at any time and receive personal instructions in crown and bridge work, continuous gum and metal plate work, and in fact in any department of prosthetic dentistry.

GHOSTLY DENTISTS. A man in Ohio who was suffering from a severe case of toothache, consulted a spiritist medium for relief. He was told to go to bed and the relief would come. He obeyed, and upon recovering consciousness he found a blood stained pillow and the offending molar on the sheet. He is deliberating whether it was nitrous oxide or spiritism, but he is glad the tooth is out anyway. —*Medical Record.*

POST-GRADUATE DENTAL ASSOCIATION, OF THE UNITED STATES.

TO THE EDITOR OF THE DENTAL REVIEW :

DEAR SIR:—Will you kindly announce in the next issue of the REVIEW that the annual meeting of the Post-Graduate Dental Association of the United States will be held in April, date to be announced later.

Very truly,

L. S. TENNEY, Sec'y.

Bathing the face and neck in hot water in acute pericementitis will prove very soothing in conjunction with counterirritation and constitutional treatment. Use a large napkin dipped in water about 180 F., do not wring it completely dry, continue this for ten minutes, and give internally teaspoonful doses of fl. ext. gelsemium, minims x., water $\frac{3}{4}$ i., every fifteen minutes until four doses have been taken, then every half hour for two hours. Or, use calcium sulphide in $\frac{1}{10}$ gr. pill until eight have been taken in two hours, then one every half hour for two hours. Relief will follow in a very short time if the treatment is followed faithfully. Try it.

A GOOD PLAN.

In Cincinnati, the Ohio College has undertaken the care of the teeth of orphan children housed in the orphan asylums. The plan is to have the children come a dozen at a time and such services as are needed—filling, regulating and extracting are rendered gratuitously. This is not only a benefit to the children, worthily donated by the college, but it is of still greater utility to the students as it will be helpful to them in learning to diagnose disease in its incipency and teach them something of the methods of managing children when they begin practice on their own account. Other colleges can follow after this idea with good results.

MUMMY WITH FALSE TEETH.

There was a good deal of interest felt among dentists some years ago when one of the royal mummies taken from the Egyptian catacombs was found to be fitted out with an upper set of artificial teeth. The plate was of wood, carved to fit the roof of the mouth, and the teeth were of brass, the natural shape of the tooth being quite closely imitated. It shows that some one of the Pharaohs felt the loss of his incisors and grinders and had the court tooth doctor to do the best that could be done for him. Before this discovery it was commonly supposed that artificial teeth were a modern contrivance, but false teeth in ancient Egypt furnish convincing proof that there is nothing new under the sun.--*St. Louis Globe-Democrat.*

SHE WAS FALSE.

"No brighter eyes did ever glow
Such lovely brows beneath,
And never opened lips to show
Such rows of pearly teeth."

Thus said I to myself as there
I stood with hat in hand
To bid "good night" to maiden fair
That did my love command.

She smiled ; I was about to speak,
When horrors ! came a wheeze,
A crinkling of her nose and cheek
And then a giant sneeze !

A sneeze that jarred the earth, and at
Whose winding up I found
Those pearly teeth within my hat,
Her left eye on the ground.

--*Boston Courier.*

SECOND HAND TEETH.

Of all the odd trades in New York City that unearthed by a *Telegram* reporter the other day is the most peculiar. On a sidewalk stand on Vesey street, below Church, a shrewd dealer had displayed a heap of second hand artificial teeth. In reply to an inquiry he said : "' Yes ; at times I sell a great many sets of these teeth. Where I mostly get them is at pawnbrokers' sales. I buy them for 10, 20 or 30 cents, and sell them sometimes for \$3. I have had old men and old women—poor people, of course—walk up to my stand, pick out a set, examine them, try them, and immediately purchase, saying that they were fitted better, than a dentist could suit them. An old man purchased an upper set from me last winter, and he was so well pleased with them that he brought his wife here last week to get a set. I had none at the time, and he promised to call this week. A person might as well save a few dollars in buying teeth as in any other way. Take them home, wash them, and they are just as good as new—in fact, better, for they have been 'broken in.' "—*Exchange.*

ST. LOUIS DENTAL SOCIETY.—OFFICERS FOR 1892.

The St. Louis Dental Society met at the residence of Dr. Conrad, on January 5, 1892, and elected the following officers for the ensuing year :

President, Dr. Geo. Robitoy; Vice-President, Dr. Walter M. Bartlett; Recording Secretary, Dr. J. B. Vernon; Corresponding Secretary, Dr. John G. Harper; Treasurer, Dr. Henry Fisher.

Committee on Publication, Drs. Helmuth, Lindsley and Keith.

Committee on Membership, Drs. Morrison, Hickman and Spaulding.

Committee on Ethics, Drs. Baird, Prosser and McNamara.

The Executive Committee consists of the officers of the society.

Regular meetings are held on the first Tuesday of each month, excepting July, August and September.

JOHN G. HARPER, Cor. Sec.,
800 Pine Street, St. Louis, Mo.

NECROLOGY—MEDICINE—1891.

Dr. Jacob Regensburger, San Francisco, Cal.; Dr. Henry Olin, Chicago, Ill.; Dr. Edward C. Harmond, New York; Dr. J. M. Quigley, Pres. Southwestern Med. Assoc., Pierce City, Mo.; Dr. Sullivan Whiting, homœopathist, Boston, Mass.; Dr. S. S. Strong, Saratoga, N. Y.; Dr. Frederick W. Beard, Vincennes, Ind.; Dr. Jennings Price, Lancaster, Ky.; Dr. John S. Messersmith, Med. Direc. U. S. N., Lancaster, Pa.; Dr. H. A. Johnson, Chicago, Ill.; Dr. Stephen G. Cowdrey, Surgeon, U. S. A.; Dr. Joseph H. Warren, Boston, Mass.; Dr. Charles T. Parkes, Treas. Rush Medical College, Chicago, Ill.; Dr. W. W. Baxter, Mount Sterling, Ill.; Dr. Ransom Dexter, Chicago, Ill.; Dr. Richard Gundry, Supt. Maryland Hospital for Insane, Spring Grove, Md.; Dr. Daniel S. Smith, homœopathist, Chicago, Ill.; Dr. Philip Leidy, Philadelphia, Pa.; Jesse P. Bancroft, ex-Supt. New Hampshire Insane Asylum; Dr. W. H. Boling, dean, Louisville (Ky,) Med. University; Dr. David McDill, Burlington, Ia.; Dr. Alfred Hosmer, Watertown, Mass.; Dr. W. Nashua, Burlington, Ia.; Dr. Fordyce Barker, New York; Dr. Willis Danforth, Pres. Wisconsin Homœop. Society, Milwaukee, Wis.; Dr. Thomas P. Gary, Pres. Florida Med. Society; Dr. James H. Thompson, Milwaukee, Wis.; Sir Prescott G. Hewett, surgeon, England; Dr. William Mottram, Kalamazoo, Mich.; Dr. John F. Groenevelt, surgeon, New Orleans, La.; Dr. O. P. Mills, New York; Dr. William Cogswell, Bradford, Mass.; Dr. Horace Duper, Boston, Mass.; Dr. George H. Lyman, Boston, Mass.; Dr. Daniel Pardee, Fulton, New York; Dr. Abraham Dubois, New York; Dr. Thomas T. Pratt, American physician, London, Eng.; Dr. Benjamin S. Woodworth, Fort Wayne, Ind.; Dr. Peter Pineo, ex-Medical Inspector, U. S. A.; Dr. David H. Storer, Boston, Mass.; Dr. Prince Page, Boston, Mass.; Dr. William O. Emerson, Harvard School of Medicine; Prof. Christopher Johnston, surgeon, Baltimore, Md.; Dr. William A. Galpin, Goshen, Ind.; Prof. Thomas B. Evans, Dean of Baltimore School of Medicine; Dr. John Clarkson Jay, Rye, New York; Dr. Phineas P. Wells, homœopathist, Brooklyn, New York; Dr. Levi Ives, New Haven, Conn.; Dr. Francis Donaldson, Baltimore, Md.; Dr. W. F. Peck, Med. Dep. Iowa State University.; Dr. Henry F. Campbell, Augusta, Ga.; Dr. R. A. Kinloch, surgeon, Charleston, S. C.; Dr. Fred L. Matthews, Springfield, Ill.; Dr. Simon T. Clark, Lockport, N. Y.

ODONTOLOGICAL SOCIETY OF PENNSYLVANIA.

President, Dr. Louis Jack; Vice-President, Dr. James Truman, 3249 Chestnut Street; Recording Secretary, Dr. A. W. Deane, 1228 Walnut Street; Treasurer, Dr. L. Ashley Faught, 1331 Arch Street; Corresponding Secretary, Dr. H. K. Leech, 16 S. 37th Street; Chairman Executive Committee, Dr. D. N. McQuillen, 1628 Chestnut Street, Chairman Clinic Committee, Dr. Frank L. Bassett, 418 Girard Building.

The stated meeting of the Society was held Saturday, January 9, at 8 o'clock, at 1228 Walnut Street.

A paper was read by Dr. Geo. W. Weld, of New York City. Subject:

I. "Syrup of Iron Chloride." (A new form of iron considered from a therapeutical point of view.)

II. "The Tincture of the Chloride of Iron—its merits and demerits."

III. "The Direct Action (if any) of weak Hydrochloric Acid upon the Enamel of Teeth."

IV. "The Ingestion of Acids, considered in connection with the so-called Secondary Effects upon the Fluids of the Oral Cavity, and the Enamel of the Teeth."

All who are desirous of reading Papers before this Society, or presenting anything of a literary nature, apply to Chairman of the Executive Committee, Dr. D. N. McQuillen, 1628 Chestnut Street.

Parties wishing to give Clinics, exhibit casts or models, or introduce new devices, apply to Chairman of Clinic Committee, Dr. Frank L. Bassett, 418 Girard Building, Broad and Chestnut streets.

H. K. LEECH, D. D. S., Corresponding Sec'y,
No. 16 South 37th street.

TESTING OIL OF CASSIA.

The best criterion of the purity or genuineness of oil of cassia is the amount of cinnamyl aldehyde it contains. It is the merit of Schimmel & Co., of Leipzig, to have first pointed out the nature of the adulteration so long practiced by the Chinese, and also to have communicated a method of testing by which the adulteration can be detected without difficulty. We published this method last year (*Amer. Drugg.*, 1890, 135), but Schimmel & Co. have recently improved the process so that it takes a much shorter time. We therefore republish it here, incorporating therein the new features, after their October report.

Requisites.—A solution of sodium bisulphite containing about 30 per cent, such as is usually sold in the market, but it must be perfectly clear; a pipette marked at 10 Cc.; a water bath; and a special small glass flask of the capacity of about 100 Cc., having a neck about 13 Cm. ($5\frac{1}{4}$ inches) long and 8 Mm. ($\frac{1}{3}$ inch) in diameter, upon which is a graduated scale beginning with 0 below, extending to 6 Cc., and divided into $\frac{1}{10}$ Cc.

Method of Testing.—Transfer 10 Cc. of the oil to be tested, by means of a pipette, into the flask, allow the pipette to drain, and empty it as completely as possible by blowing through it. Now warm the flask on the water bath and then

add to it the solution of sodium bisulphite, in small portions at a time, waiting after each addition until the solid mass produced by it has become completely liquid again. When a further addition of the solution produces no solidification, the whole of the aldehyde has entered into a liquid combination with the bisulphite. About ten or fifteen minutes will be required for this reaction, provided the percentage of the aldehyde was high. If only a small quantity of aldehyde was present, a longer time is required to complete the reaction. The completion of the latter is recognized by the contents forming two distinct and sharply defined layers—one, a lower aqueous one, containing in solution the bisulphite compound of the cinnamyl aldehyde; and an upper, oily layer, consisting of the other constituents of the oil. Now take the flask from the water bath and cool it to the ordinary temperature [at which the original oil was measured]. Next add more bisulphite solution until the oily layer has been driven up into the narrow neck of the flask, and its lower margin corresponds with the mark 0. Read off the number of cubic centimeters of this layer and deduct it from 10. Supposing the oily layer measured 2.7 Cc., then the original oil contained 7.3 Cc. of cinnamyl aldehyde and 2.7 Cc. of nonaldehydes, or 73 per cent of the former and 27 per cent of the latter. Of course these are percentages by *volume*. Yet, since the specific gravity of the nonaldehydes of oil of cassia (1.060 at 20° C.) is almost identical with that of cassia oil itself, the difference between percentage by volume or by weight is insignificant.

In making the test it is necessary to insure one's self that the *whole* of the cinnamyl aldehyde has been acted upon. No sign of any coagulum must be remaining, either in the oily layer or adhering to the flask.

If the oil is adulterated with much resin, the coagulum produced by the bisulphite will dissolve only with difficulty. If protracted heating does not cause solution, the above test is inapplicable.

Instead of using an additional quantity of solution of sodium bisulphite to cause the oily layer to ascend into the neck of the flask, a filtered solution of chloride of sodium may be used.—*American Druggist*.

O'DONTOGRAPHIC SOCIETY OF CHICAGO.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—At the annual meeting of the Odontographic Society of Chicago, held Dec. 14, 1891, the following officers were elected for the ensuing year:

President, E. L. Clifford.

Vice-President, Geo. J. Dennis.

Recording Secretary, U. G. Poyer.

Corresponding Secretary, T. A. Broadbent,

Treasurer, E. Noyes.

Board of Directors.—E. L. Clifford, U. G. Poyer, R. B. Tuller, Geo. J. Dennis, C. E. Bentley.

Board of Censors.—D. C. Bacon, Louis Ottoby, D. M. Gallie.

Very truly yours,

T. A. BROADBENT, Cor. Sec'y.

DENTES SAPIENTIA.

Away! away! thou hateful fang,
 Begone! avaunt! and get thee hence;
 Thou'st cost me many a twinge and pang,
 And now thou'st cost me fifty cents.
 And *thou* art called the "*wisdom tooth*,"
The just fulfillment of a law!
 Then ignorance were bliss, forsooth,
 When thou are absent from my jaw.
 And *thou* the "*star of manhood's dawn!*"
 The ivory crown of womanhood!
Daylight comes when thou art *drawn*,
 And "*stars*" appear to say "*'tis good.*"
 If wisdom thou dost symbolize—
 A type of logic and of love,
 A martyr then thou shalt comprise,
 To *be a sign* forevermore.
 So now begone on swiftest wings,
 And gums heal up in ignorance;
 Thou'st cost me all that wisdom brings,
 And now thou'st cost me fifty cents!

ELGIN, ILL.

—C. J. Underwood, D. D. S.

ANNIVERSARY MEETING OF FIRST DISTRICT DENTAL SOCIETY.

The following is the programme of the anniversary meeting of the First District Dental Society of New York, to be held January 18, 19, 20, 1892, at the Academy of Medicine, New York city.

The essays to be read are:

"Pus Formation—Revived," by Professor D. R. Stubblefield, Nashville.

"A Plea for Replantation as a Cure for Chronic Alveolar Abscess," by Professor John S. Marshall, Chicago.

"Some Thoughts on Transformism," by Professor C. N. Pierce, Philadelphia.

"Borders between the Natural and the Artificial in Bridge and Crown Work," by Dr. Calvin S. Case, Jackson, Mich.

"Adenoid Growths, Mouth-Breathing, and Thumb-Sucking, and their Relation to Irregularities of the Teeth," by Dr. Norman W. Kingsley, New York.

Dr. Kingsley's paper will be illustrated by a number of casts of faces, models of jaws, and regulating appliances.

The following distinguished gentlemen have agreed to discuss the above papers: Dr. J. E. Garretson, Dr. C. N. Pierce, Dr. James Truman, Dr. S. H. Guilford, Dr. E. C. Kirk, and Dr. Chas. J. Essig, Philadelphia; Dr. J. Taft, Cincinnati; Dr. John S. Marshall, Chicago; Dr. D. R. Stubblefield, and Dr. J. Y. Crawford, Nashville; Dr. C. S. Stockton and Dr. S. C. G. Watkins, New Jersey; Dr. Thos. Fillebrown, Boston; Dr. G. L. Curtis, Syracuse; Professor Chas. Mayr, Springfield; Dr. Frank Bliven, Worcester; Dr. F. T. Van Woert, Brooklyn; and Drs. J. N. Farrar, Geo. S. Allan, and Carl Heitzmann, New York.

The following gentlemen will give new and interesting clinics: Dr. J. Y.

Crawford, Nashville; Dr. Geo. V. I. Brown, Duluth; Dr. Sydney S. Stowell, Pittsfield; Dr. F. T. Van Woert, Brooklyn; Dr. A. H. Gilson, Boston; Dr. John L. Gish, Jackson, Mich.; Dr. S. C. G. Watkins, New Jersey; Dr. W. F. Rehfuess, Philadelphia; Dr. W. F. Davenport, New York, and a number of others with whom we are still in correspondence. In addition, there will be a number of new instruments, devices, etc., shown by various manufacturers. The clinic will be held in the large clinic room of the Academy, where there will be space enough for everything to be seen by all who attend.

The Wednesday morning's session will be devoted to a mass meeting of all interested in the Dental Protective Association. Dr. Crouse will preside, and several prominent men will make addresses.

The Trunk Line Association have agreed to sell tickets from points on their road for one and a third fare.

The profession are cordially invited to attend.

RODRIGUES OTTOLENGUI, *Chairman Executive Committee*,
115 Madison avenue, New York.

SPRINGVILLE, IOWA, Jan. 8, 1892.

DR. A. W. HARLAN.

My Dear Doctor:—Will you allow me space in the REVIEW to make the following statements:

First. I resigned as editor of the *American Journal of Dental Surgery* prior to the last issue, Oct., 1891.

Second. I have no evil feelings toward any Dental College.

Third. I have full sympathy with the Association of Dental Faculties.

Yours respectfully, GUSTAVUS NORTH.

True Copy

"CHICAGO, ILL., Jan. 2, 1892.

This is to certify that Dr. Gustavus North, former editor of the *American Journal of Dental Surgery*, sent in part of the *Journal* matter for publication in September for the October number, 1891. The *Journal* was delayed for other matter and before it was published, Dr. North resigned as editor, and his name was retained by mistake as I was out of the city.

G. A. STEVENSON,
Managing Editor."

True Copy.

"CHICAGO, ILL., Dec. 29, 1891.

I hereby certify that Dr. G. North resigned from the editorship of the *American Journal of Dental Surgery* prior to last issue of same and that his name was kept on as editor by mistake.

I. CLENDENEN.

DIED.

At the age of twenty-five years, Dr. Joseph A. Swasey, only son of Dr. James A. Swasey.

We tender our deepest sympathy to the bereaved family in their sad affliction. It is particularly sad to see a young life cut down just on the threshold of manhood, with all the brightness of life and a career of usefulness before it.

Dr. Swasey studied dentistry with his father, and graduated from the Chicago College of Dental Surgery in 1889. Since that time he has practiced his profession with his father, where his many genial qualities have won for him many friends, who mourn with us his early demise.

THE DENTAL REVIEW.

VOL. VI.

CHICAGO, FEBRUARY 15, 1892.

No. 2.

ORIGINAL COMMUNICATIONS.

THE USE OF BOOKS.*

BY G. V. BLACK, M. D., D. D. S., JACKSONVILLE, ILL.

In literary schools the use of books is given the place of first importance. The child when taught its A B C's is given a book that it may study the forms of the characters used. When these have been mastered comes the study of the thought that has been transferred to the printed page. At first the pages are divided into lessons and the pupil is examined from time to time as to his understanding of the contents of the lessons. In this way the teacher learns whether or not the pupil succeeds in grasping the ideas expressed in the written words, and by supplementing them with oral explanations, corrects and amplifies the thought obtained by the pupil. The general idea of teachers in pursuing this form of instruction is the transmission to the pupil of correct ideas of literature and science, and particularly to develop his power to comprehend written language. It also deals with the use of language by the pupil, and to this end he is put to writing early in the course. This course of instruction furnishes an extended training in the use of the books which have been selected for this primary education.

This plan of study, when extended through the college curriculum, is intended to be sufficient to give the pupil such a mastery of the use of books on general literary subjects that he will be able to continue his studies independently of his teachers. That is to say, his instruction has been such that he is able to take up new books on literary subjects and obtain the thought of the authors. He is

* Read before the Odontographic Society of Chicago, February 8, 1892.

also supposed to be able to judge fairly well of the correctness and of the value of the thought expressed in books of this class, and to be able to select such books as may be best for his continued mental development. His course of instruction has, indeed, included a general knowledge of the important books in literature, though his allotted time of school work has been only sufficient for him to study a few in detail.

Such a course is supposed to be the best to fit the pupil for the beginning of professional studies. He has gained an extended knowledge of language, has become intelligent in several departments of natural science and is able to read to advantage in these fields of thought. But this has given him no knowledge of medical or dental literature. He has had no instruction as to the character or scope of the books in dentistry or medicine. Though he may have made an extended study of language, he meets strange terms at once. Many familiar words are used in a technical sense, and he finds many new words and special compounds of old words, the meaning of which must be learned before he can understand what he reads. In entering a new field of thought the pupil has entered a new field of technical language in which that thought is expressed. He must learn to read his new literature understandingly and effectively if he would master the thought it contains. In following out the general idea of educators it seems to be supposed that when a pupil has passed the school he has become sufficiently acquainted with the literature of the subjects taught to be able to read that literature effectively.

Now when a student enters a medical or dental school a radical departure is made from this general plan of instruction. The lecture takes the place of the books. When we look over the catalogues of medical and dental schools we generally find a list of books *recommended* by the faculty. With this recommendation in the catalogue all reference to books by the faculty usually ends; and the use of books by the student, if used at all, is by his own motion. Those who have passed through the curriculum of literary institutions are not the only ones admitted to medical and dental schools. Perhaps a majority have had but a part of this training, and, presumably, have not had the advantages in the use of books enjoyed by their more fortunate comrades. No distinction between these can be made in professional schools. If admitted at all they are on equal terms.

Recently I was in company with a half dozen young physicians, all of whom were graduates of literary schools. I questioned them as to the use they made of books while at their several medical schools. All said that no one of their professors had mentioned the subject of their reading, or the books they should use during their pupilage. In answer to the question whether they used books, they all said that they did. One said that about the only attention he gave the lectures was to know the subject. He then read from three to five authors on that subject. Another said he took notes of the lectures and compared them with from one to three or four authors. Thus I found that these young men had depended on the lectures as their guide in study, but had done the real work from books. Among another group of young physicians the case stood differently. They were not graduates of literary institutions and therefore had not had the same training in the use of books. Like the others they had not been questioned as to the matter of reading. Most of them had depended entirely on the lectures except in anatomy and one or two other subjects. They had found the study of books hard work. Now which of these groups of young men were best prepared for continuous advancement in medical knowledge after entering practice, those who had made use of medical books or those who had depended entirely on lectures? There can be but one answer to this question. Skill gained in the use of medical books equips the man for future study and advancement which the sole dependence upon lectures while at school can never do.

It has happened that in these two interviews it was the collegemen who had taken to books in the study of medicine. But other interviews have shown that while this is the most general rule, it is by no means universal. Some men who have had but a common school education have become the most persistent users of books and masters in the art of effective reading. On the other hand many who pass the literary school throw aside their books as soon as they receive their diplomas. It is the man that wins knowledge. But the man must adopt means to that end. What other means equals the skillful use of books? In the medical or dental college lectures are well enough; but what of the student in after years who depends only upon the lectures? What skill has he attained in the use of his professional books? What is his equipment for continued progress? If he has not become an efficient reader of

professional literature he is at a great disadvantage. In order that he may continue his studies he must learn a new art, that of reading effectively. It is an art that is often difficult to acquire, but is acquired easiest and most certainly under the stimulus of college work. I hear the suggestion that any one admitted to a medical or dental school has learned to read. Certainly they can read, all of them. But there is reading—and reading. It is one thing to read words, it is another thing to read thoughts effectively. It is the thought we wish to acquire. A person may have learned to read one class of books fairly well but will require months of effort before he can read another class of books effectively. While I should not urge a change of the lecture system now in vogue, I insist that dental students should be put to systematic reading while in school, and time provided for this work. They will be better students; but more than all else, they will be prepared to go forward with their professional studies after they leave school to enter practice.

There is a great difference between the medical and dental professions as to the use of books. The medical profession is older and more mature. It has a much more extensive library for its students to draw from. Its membership is much more habituated to the use of books. The more successful medical men are generally found to have collected extensive libraries. We cannot say this of the dental profession. There are individual dentists who have large libraries; but we generally find dentists with but few books and not given to extensive reading. Many dentists who have long held a lucrative practice have but few books.

It may be said that the dental literature is scanty. Is it not equal to the demand? Some time ago a very able dentist complained of the lack of books, and I said to him, "Why don't you write a book on operative dentistry?" "Who would buy it?" was the rejoinder. I will venture to say that when there is sufficient demand for books on any subject relating to dentistry to justify their preparation and publication they will be placed before the profession. The difficulty is with the demand. Dentists do not use the books now on hand.

There is a general complaint that the books now extant in important departments are not suited to the needs of the profession. This plea is made particularly as to operative dentistry and is probably more nearly correct in this than in any other field. To me this is very curious. Suppose I wished to start an office pupil

in operative dentistry to-day, what book would I give him? I would have to fall back on the articles in the *American System of Dentistry*, not having any book devoted exclusively to operative dentistry that is suitable for a beginner to read. This is not the most popular work however. Another is found recommended in nearly all of the college announcements and I believe is found in more offices than any other. This is Harris' *Principles and Practice of Dentistry*. It is a book that has descended to us from a past age and has been patched out time and again until it reminds one of the rubbish loft of some old family who have lived in the same house for several generations without having had a fire. The original was a splendid work, and it bore good fruit. But oh, the dust of the ages have gathered on its pages now. I know of no other good book that has run such a gauntlet of revision and lived. This could not be but for the wonderful vitality of the original work and the reverence of the dental profession for the author.

In operative dentistry we have the poorest equipment in books, and in this particular field there is the greatest diversity of opinion and practice among dentists. It is probably to this that the poor equipment in books is due. There are very few men who feel that they could produce a book on this subject that would be acceptable to a majority, or even a respectable minority of the members of the profession. While this state of things exists it will be difficult to remedy the evil. How long will this condition remain with us? Probably until some one develops the genius to catch the ear of the profession and crystallize the apparent discord in operative procedure into one, two or more definite systems that will be recognized as embodying in intelligent form the best thought of the profession. In lieu of this we may have a number of books contending for favor each of which has a succinct crystallization of operative procedures along definite lines of thought. This latter is probably the most desirable, as furnishing more incentive to effort and will therefore beget greater progress. If professors of operative dentistry would require that their pupils read this subject as well as listen to their lectures the deficiency in books would soon be remedied. New books would soon be demanded by practitioners as well as by pupils.

In most other departments we are better supplied with books though more are needed in all. The newer departments of crown and bridge work have a better representation than the older operative

dentistry. These may be in a degree immature and will need much revision both by addition and exclusion as time matures principles and methods. Orthodontia is also becoming well represented. But the simplification of the procedures in this department promises to render much that has been written valueless. Still the pupil will find here a great diversity of plans from which to choose for adoption in practice.

Materia Medica is represented in several books. In this field the rapid introduction of new remedies necessarily renders the books imperfect in a short time. This can hardly be regarded as a drawback. Such new remedies belong properly to the Journals until their merits are fairly well established. A few years may suffice to rule them out and they would stand in the books as so much waste space.

The surgical procedures in accidents to the mouth and face and the surgical diseases of these regions are better represented in books than any other department. Pupils and practitioners have abundant opportunity for reading and a mastery of what is known. This subject is not confined to dental publications. Most of the authors of surgical treatises have entered this field of work, for here dental surgery and general surgery overlap each other.

Strictly dental pathology is not so well represented in our books, which indicates either a dissatisfaction, diversity of opinion, or a lack of interest, in this department of study. Dissatisfaction with opinions in the presence of great interest in a subject should express itself in a multiplication of books. But this is not always the result as is clearly seen in operative dentistry in which lack of interest cannot be claimed.

I need not speak of other departments. All are in some way represented, some poorly, some fairly well. Every dentist can find books to read from which he can derive much information in regard to any field of practice, and the time spent in reading them will be well employed. There are many old books that should be read. There are a good many old books that ought to be reproduced in their original form; not as books to be followed in practice now, but books that should be studied because of the excellence of the thought which they contain, and because they are mirrors of the past ages of our profession. Among these are Hunter, Carrebelli, Fox, Robinson, Fitch, Regnard, Kocker, Deserabode, and the early editions of Harris and Tomes, with many others. The study of these old

authors gives one a broader view of dentistry and a better idea of what the real advance of thought has been.

Some things cannot be obtained by reading dental literature.

Dentistry is in large degree an art and requires finger skill for its practice. This cannot be acquired from books. One may read all of our literature and not become a dentist. The handling of instruments is acquired by practice, and the time required in learning is much shortened by personal instruction. All operative procedures should be taught first by personal instruction—by examples which are to be imitated by the pupil until he gains some proficiency in the use of instruments. This is necessary before he can grasp the ideas of the lecture or of the printed page. Then he may extend his knowledge by reading and adopt in practice the plans given in books. Personal instruction is a necessity to the beginner. The mature pupil should depend more upon books. Personal instruction cannot be continued. If the pupil has not learned to use books his education will be finished when he leaves school, or he must yet learn to use books. If he has learned to use books his education has only fairly begun.

THE JOURNAL LITERATURE.

The medical journal literature is exceedingly rich, and the dental, though not so profuse, is very full and complete. The highest object of a journal literature is to supplement books by a presentation month by month of the most recent thought. Books present more mature thought and generally in more concise form. In journals there is necessarily much that is of little value. Much of it is the presentation of impressions of something that is comparatively new to the writer, but which he thinks worthy of being placed upon record that his profession may judge of its value. It may be found important. If so others are likely to take it up, improve the thought by weeding out here, adding there, and finally the more valuable ideas will find their way into books. Therefore the journal is in advance of books in presentation of the thought of the profession. In books a subject is taken up and discussed as a whole, presented in its completeness so that the student may obtain the beginning and the end. The journal article is devoted to some thought, some particular mode of procedure in operating, or some especial pathological condition. Therefore the articles are comparatively short. They are suitable for quarter or half hour

readings. It requires, however, more professional learning to read the journals advantageously than to read books. Authors of journal articles take it for granted that the reader is acquainted with the literature and modes of practice, and many explanations needed by the novice are wanting. Again, so much of immature thought finds place in the journals that the reader should have acquired a fair degree of judgment as to the value of what he reads. This cannot always be regarded as an objection to the journal; never, unless the editor is neglectful as to the character of the articles he prints. Much of the thought presented in journals is simply placed on trial, and that which my judgment, or the individual judgment of the editor, might condemn, may prove to be valuable. Many of the better things in literature have been condemned at first reading by learned critics and have afterward been recognized by the world as models of thought and expression. We should not, therefore, condemn journals because some of the articles are of little value. Neither should we drop the reading of a journal because a number or two fails to interest us. The next number may contain a single article that will be worth a dozen years' subscription besides compensation for much uninteresting reading. The journal, standing as it does in the foreground of advancement, becomes an element in the makeup of every man who keeps pace with professional progress. Any one who fails to read the journals will be behind, not only in his thought, but also in his practice. Our profession is progressive; every year marks an advance in thought, and in the details of practice.

This advance is recorded in the journal literature and is absorbed more or less perfectly by those who read, or by each individual in proportion to his skill in reading. Those who fail to read are dependent upon occasional interviews with their fellows for any advance that accrues to them. Then is it not possible for the individual to advance by the use of his own unaided mental acumen? Such efforts remind me of two bright farmer boys who, when a rainy day came, shut themselves up in the barn and made five dollars a piece trading jack-knives. I would be the last to deny the utility of personal effort, but efforts extended along recognized lines of utility have so long given the best results that I have not much faith in those which the experience of the world has shown to bring disaster.

HOW TO READ.

How to read effectively is a serious problem. Men of my acquaintance, whom I know to be good readers, pursue different plans. Some seem to consume everything, digest it all, and in some way cast out the refuse. But the best readers I have known are not given to reading all that comes to their hands, whether in form of books or journals. These may be divided into selective readers and subject readers. The selective reader takes up his journal and notes the names of the authors of the articles. Certain ones whom he knows to be good writers are noted—"to be read;" his eye falls upon a strange name. Who is that? He turns to the article and looks over the pages. If he knows how to find out anything about the man he goes about it. If not, he quietly sits down to read the article and will in that way form an estimate of him. He notes the form of the title and makes up his mind what ground the article ought to cover. Then he reads slowly and carefully, noting the forms of the sentences, their completeness or incompleteness, the clearness of expression, etc. As he goes more deeply into the reading he notes the arrangement of the presentation and how the author develops the thought, whether haphazard or in a consecutive and natural sequence of thought upon thought. He may stop when half through, or if the article has pleased him, when through the reading he is apt to sketch back over it, rereading a passage here and there and arranging the thought in his own mind in the order he finds easiest for himself. Now he has probably made up his mind whether or not he will read this author afterward and will pass his articles or note them "to be read" accordingly. The authors noted "to be read" are gone over carefully and the journal is placed on the shelf with perhaps one-half or one-third of the contents read by title only. This plan of reading is the highest order of purely literary reading, but is possibly not so well adapted to professional work as some others.

The subject reader pursues a different course. He too may look for known authors or may scan closely the style of expression of thought over a new name. But he is always studying some particular subject. Not always the same subject by any means, but one particular subject at a time and while studying this subject he reads every author he can find who has written upon it. If his journals of the current month have no articles upon his subject the articles are read by title and certain ones marked—"to be read"

—perhaps the title is written in an index rerum and the journal placed in its box until a more convenient time. This man is apt to become a very persistent reader. If the opportunity offers he visits the libraries in search of authors to whom reference has been made. He borrows from his neighbors. He ransacks the old journals seeking out half forgotten articles, and gathers together everything available on that subject. He reads certain articles many times. He makes himself master of all that has been said by writers, compares them and draws his own conclusions. Then he drops that subject for the time and takes up another which he follows in the same way.

In this way some men make themselves masters of the literature of their profession and naturally of their profession also. Such readers are now and then found to have weak spots. Some particular departments of professional work have never claimed their earnest attention and therefore have been skipped in their selection of subjects of study. But this class of men are more prone than others to become masters in their particular fields. This plan of reading when not too exclusively followed is probably the best form of professional work. It should not, however, be followed to the exclusion of miscellaneous reading for too long a period.

Still another group may be classed as spasmodic readers. Their interest is aroused on some subject and they read everything they can find. When the supply has been exhausted on that particular theme their interest is lost and reading flags and dies out altogether. After a varying period of repose during which the journals are neglected, even reading of the articles by title, another spasm is brought on by some remark or incident and another subject is read. Thus it goes on year after year.

Purely miscellaneous reading, that is, reading what comes to hand without order or method has little to recommend it. Such reading is apt to become listless and objectless. It is prone to drift into careless reading. In this case the reader may as well go fishing so far as the benefit of his reading is concerned.

To be most effective reading must be pursued for a purpose. I had nearly said that it made little difference what the purpose might be if it produced a strong impulse, but this is hardly true. I have heard of some professional men who seemed to read only to find out how little authors of books or journal articles knew about their subjects. They seemed to read only for the purpose of

averse criticism. I must say that this purpose, though it may be very strong, is not favorable to the development of correct thought and the most sincere practice. I have no fault to find with sharp criticism now and then when persons hold different views. It stimulates inquiry. But when I find a person who seems to read only for this purpose I often wish he hadn't read. The gratification of literary taste is a good motive in purely literary reading, but it should form but one element in professional reading. In this field the utility motive should enter largely into the work. Many effective professional writers are but homely composers when judged from the literary standpoint. On the other hand, some excellent writers in the literary sense are not forcible writers. They are better fitted for fields of labor in which beauty of thought and expression becomes the useful element instead of the enforcement of the stern facts of pathology or operative procedures. He who reads too purely from the literary impulse or judges his authors too closely from that standard will not do the best professional reading.

The desire to know, and the stimulation which effective reading brings to this desire, coupled with conscientious practice, is perhaps the most effective impulse to professional reading. If this is spiced with a wise literary taste that will not be shocked by an author of homely but forcible phrase, all the better. Our professional study is either utilitarian or scientific and the impulse to know should overrule literary taste now and then and perhaps always stand in the foreground. The desire to know is the first element and the conscientious service of our patients is the second, and this should grow in strength as we grow in knowledge until the two become woven into a common sentiment as the woof and warp in the fabric that binds us as a bond of love to professional duty.

POST-GRADUATE STUDY.*

BY R. B. TULLER, D. D. S., CHICAGO, ILL.

The subject I have chosen to bring before you this evening, Post-Graduate Study, permits of a wide range of thought, but the province of this paper is to present to you as briefly as I can some essential features that appear to me to be worthy of your serious consideration.

* Read before the Chicago Dental Society.

As it is said there is nothing new under the sun, I cannot hope to advance many ideas that are new, but shall content myself with the fact that in turning over some old ones, you will find the subject one that has not been so often revamped as some others in dentistry.

"Education ends only with life." Hence the most extensive period of our pursuit of knowledge comes after school days are over and is therefore post-graduate study.

It would seem of importance then for us as dentists to thoroughly comprehend the situation, and in our aim to elevate the profession collectively and individually, to look at the facts as we find them.

We claim for dentistry the *rank* of profession, but it is a fact to be regretted that we are largely made up of men who never looked inside of a college, and that the average graduate in dentistry does not fulfill the conditions as to liberal education that one would expect to find in a professional man, or even a thorough and competent dentist in many cases.

As the same thing applies to graduates in other professions in this country, we are not alone in that.

We may all know why this is so and the remedy for it, but it is not my purpose to enter into the why and the wherefore. I believe the recognized colleges of dentistry have kept apace with the advancement of dentistry at large and will continue to do so in future. Everything of this character is one of the educational problems and has to grow and develop; it cannot spring to perfection at a bound.

I simply desire to show by the existing state of things what need there is to stimulate post-graduate study or *home* study to greater activity.

If existing methods have failed to advance students sufficiently, a way must be opened for further advancement by some other method, which will be adapted to such conditions as they find after leaving school, i. e., in practice.

Home study must be prosecuted during the leisure hours which we may have. To one in fair practice and attending to the many other duties of life, such leisure is not abundant. Whatever time we may have for study or reading, it is essential to know how to employ to the best advantage. One hour a day systematically employed would add much to one's store of knowledge in a year.

One must per force add something in daily practice whether

especially sought after or not. We must do one thing or the other, advance or retrograde. We cannot stand still. The mind that is not developing is deteriorating. Experience is a good teacher, but life is too short to fill our measure in that way. To be successful we must keep up with the procession. To be broadly intelligent we must profit by the experience of those who have gone before, and who have woven the threads of knowledge which they found by long dilligent search and weary groping, into valuable literary fabric that others might be benefited thereby. But we do not want to read at random. To be sure many men follow the bent of their own inclinations in educating themselves and improving their minds, ultimately reaching the higher rounds of the ladder. But that does not argue that they might not have had much more rapid progress and greater success under a properly directed and systematic course. We are not all alike and have not all the same capacity or power of comprehension and perception. Most of us need guidance and advice when we undertake to navigate unknown waters or follow unfamiliar paths. We are otherwise likely to drift.

The Chicago Dental Society has upon its rolls the names of many members who rank among the leaders in the dental profession and who have well earned that distinction.

I do not presume to come before such men and advise a course by which *they* may be better able to uphold the dignity of the profession; but we know that taking the profession at large, as it stands to-day, both as regards graduates and nongraduates there is much to be desired in the way of advancement all along the line, and I am imbued with the idea that a regular systematic course of post-graduate study or reading can and should be established, arranged for and open to all kinds and conditions of men now in actual and legitimate practice of dentistry, and that it would do more eventually to elevate the profession at large than all the laws or all the influences that have so far been brought to bear, except perhaps, that of good dental periodicals, and we should hope to have their valuable assistance in this work.

Dentistry being largely a development of the last half a century, and dental colleges a sequence in the progress, and there being a necessity for restrictive laws not only enacted but enforced—not yet fully comprehended it seems: it is not surprising to find our profession largely made up of practitioners without diplomas. I

think some may be surprised to know that out of about eighteen or twenty thousand dentists now in practice in the United States, less than one-third are graduates. The data for this statement comes from reliable gentlemen in the profession who have taken pains to get at the truth.

If what an eminent member of our profession, an M. D., D. D. S., in correspondence with me, says is true, a diploma does not always indicate the better man or dentist. I will quote from his letter: "The average student is after a diploma and nothing more. When he has acquired it he at once proceeds diligently to forget all that he learned, rather than to acquire any new knowledge. He don't want scholarship, he merely wishes the *name* of it."

I believe that is true of many. The hustle after the nimble dollar absorbs all other ideas. To a greater or lesser extent it cuts a figure in the affairs of all men.

But many men become indifferent to advancement because circumstances have cut them off from environments that are conducive to the ever onward and upward. We in large cities where it is easy to convene from time to time for mutual improvement are more fortunate. In such intercourse there is that healthy competition of active minds that stimulates all to greater exertion and higher aims. The value of such personal contact cannot be overestimated.

Let me quote a little from Henry Drummond's "Natural Law:" "The development of any organism in any direction is dependent on its environments. A living cell cut off from air will die. A seed germ apart from moisture and an appropriate temperature will make the ground its grave for centuries. Human nature, likewise, is subject to similar conditions. It can only develop in presence of its environments. No matter what its possibilities may be, no matter what seed of thought and virtue, what germs of genius or of art lie latent in its breast, until the appropriate environment presents itself the correspondence is denied and development discouraged, the most splendid possibilities of life remain unrealized, and thought and virtue, genius and art are dead."

The "Chautauqua idea" which I believe originated the plan of systematic home study is not new in connection with dentistry. Dr. W. C. Barrett, of Buffalo, N. Y., urged a movement of this kind as long ago as 1884 and shortly after made a very urgent plea for it before a dental convention at Springfield, Mass. In the

June number of the *Independent Practitioner* for 1886 he said: "Is it not practicable to establish a grade of study to be pursued at home, to mark out a systematic course to be studied under competent instructors, the tuition to be obtained by correspondence or by the publication of lectures on definite themes somewhat after the manner of the Chautauqua literary course, but modified to suit the exigencies demanded."

There are difficulties in the way no doubt. There are difficulties in the way of almost any undertaking. If the idea is good that should not deter us. Under proper auspices, seems to me such a course ought to become popular with every dentist in the profession. It should have the good-will and coöperation of colleges and college graduates, for in no way would it conflict with their work, and in no sense could it be construed as a substitute for college training.

There can be no injustice to graduates that I can see in opening our course to nongraduates. Many nongraduates are in every way worthy men and many of them practiced dentistry before a good many of the colleges came into existence, and when we think of their large number let us draw no line except to extend no benefits to any not now in the profession.

Now, in establishing a post-graduate course of study, some new degree, or something to signify reward of merit must be adopted. It must not be a cheap distinction, but must represent real culture and attainment which may be acquired by faithful study of the course.

I have corresponded with quite a number of prominent men in the profession and so far have not found one who does not speak favorably of such a movement if it can be properly directed.

One writes me at considerable length and I will read a portion of what he says. It perfectly accords with my own views and is so much better expressed than I could do. He says:

"In the first place I should expect but a limited number to begin with this course. We have too few real students to get many earnest men. But I would have a convention of some kind, the most experienced educators in dentistry being in attendance, and after due deliberation a schedule of real study extending over some years—three at least—adopted, and text books recommended. I would have a competent corps of teachers appointed, under whose advice and instruction every student should study.

Of course this must be done by correspondence. * * *

Every year there should be a finishing course of lectures delivered upon definite subjects within the studies of the year, and a careful examination held by the teachers, or better still, by a competent board, if such an one could be organized.

Let the examinations be *rigid* and *exhaustive* and incompetent men be mercilessly plucked. Then there would be some credit in passing the examinations, and the thing would not be a farce.

This annual meeting could take the place of a dental society meeting. It might last a week or more. The very best men in the several departments, the most experienced teachers could be engaged. They could get some fees, for it is idle to believe that the *best* men could be expected to give their time free. Fees could be charged for passing and finishing.

If some plan like this could be rigidly enforced and the examinations made something more than a mere farce, the annual meeting would become one of the greatest events of the year. It would be a gathering of the *scholars* of the profession, and very soon all the scholars would be found there. The lectures and demonstrations (not clinics) by the very best men outside or inside the profession would attract the attention of all and would insure the regard of the scientific world.

In time such an organization, if conservatively managed, would occupy a position in dentistry analagous to that which the Royal Society of England, and the Academy Française of France hold, and membership would be an appreciated honor. But this could only be accomplished by a very exclusive course. Anything which should be done simply for the purpose of securing popularity would be ruinous to the final end."

This seems to point out how a post-graduate degree might be adopted and made one of high merit.

In my own way of thinking the course should embrace everything from the fundamentals of dentistry up to anything that might be demanded at the top to make men broadly intelligent outside of dentistry, and should be divided into series or classes, with certificates granted at the completion of each series. Those who needed to go through the entire course could do so, but graduates in dentistry and those further advanced might begin according to their advancement.

I wish, gentlemen, this subject might have been presented to

you by some one better fitted for it than I am, for I am one of those who most thoroughly feel the need of post-graduate study and do not pretend to be a leader in such a movement. While it has interested me greatly and I shall do what I can in my humble way, to further the cause, I am seeking for some one who is well qualified to step forward as its champion. With so much need of it and so much to commend it I hope to see a post-graduate course established. But a handful of somewhat obscure men cannot, I fear, accomplish it. It must have the coöperation and indorsement of the best men in the profession and the course of study must of course be directed by the most competent men.

The Post-Graduate Dental Association of the United States was organized with this movement as one of its aims and objects. They are so unfortunate, as many of you know as to have your humble servant as the present President. About the only quality I pretend to possess concerning this matter is persistence in trying to bring this movement to the front, and I am thus open to your criticisms, and I shall feel that something has been gained if I can get any suggestions or new ideas that will help along the cause.

ABSCESS OF THE ANTRUM, WITH CASES AND TREATMENT.

BY I. P. WILSON, D. D. S., BURLINGTON, IOWA.

The subject of this paper has not, until within a few years, received the careful attention of pathologists that its importance deserves, and, even now, some of our ablest writers on the subject make out their diagnosis without ever taking into consideration the most common cause of antrum disease, viz., diseased teeth.

The idea that diseases of the maxillary sinus have their origin almost exclusively from abnormal conditions of the nasal fossæ, has for many years been exploded.

The *New York Medical Journal* of Nov. 7th, contains an elaborate paper by F. H. Bosworth, M. D., of New York, entitled "*Various Forms of Disease of the Ethmoid Cells.*"

This paper was read before the *American Laryngological Association* at its thirteenth annual Congress.

The writer reports a large number of cases of disease of the ethmoid cells, eleven of which were complicated with disease of the antrum. The paper is one of great interest, but there is room

to doubt the correctness of the writer's diagnosis in several of the cases reported.

If the author is in error as to the cause of the diseased conditions reported, the fallacy of his reasoning is obvious.

The writer does not make a single allusion to diseased teeth as being even a possible cause of antrum disease, but attributes all to "mechanical obstruction."

After reporting a number of cases of disease of the ethmoid cells complicated with antrum trouble, he endeavors to explain at length the cause of these pathological conditions, and then concludes by saying: "I take it, then, that the origin of both the antrum and the ethmoid disease lies in the mechanical obstruction which is caused by the presence of nasal polypi, and that these growths are the cause, therefore, and not the result of the ethmoid disease."

That disease of the sinus and the cells above referred to are usually the cause of mechanical obstruction is indeed very questionable.

Let us briefly examine this large air chamber, and consider some of the perils to which it is exposed.

The apices of the roots of the first and second molars are separated from the antrum by an exceedingly thin plate of bone, and not unfrequently some of the roots of these teeth project into the sinus with nothing but soft tissue covering the apices.

If the pulp of one or both of these teeth should become diseased and die, and as a result an abscess should form at the end of one or more of these roots, the only way of escape for the pus is into the antrum and out through the nose. The normal mucous secretions become contaminated with the pus, a large accumulation of purulent matter soon forms, and in some instances the thicker portions of it become stored away in the little "pockets" or recesses of the antrum to breed disease of the mucous membrane of that cavity and to the parts intimately associated with it. Not only do the roots that penetrate the antrum very frequently cause this trouble, but all roots that are separated from the antrum by only thin plates of bone are liable to produce the same results.

When an abscess is formed at the root of a tooth an outlet is gained at the weakest point. If the thin plate of bone between the apex and the sinus is weaker than the alveolar process, the accumulation of pus will burst through into that cavity rather than form a fistulous opening through the gum. The inflammatory con-

dition will now subside to a great extent, but a dangerous nuisance has been created, which assumes at once a chronic form, and unless the *cause* is removed, not only the antrum, but the ethmoid and even the sphenoid cells and the frontal sinuses are sometimes involved, not so much, perhaps, from continuity of the parts as from actual contact of the virulent discharge being continually thrown upon the delicate mucous membrane of those neighboring parts.

It should be remembered that while the body is in a recumbent position almost if not all the air cells or cavities above named may be visited by poisonous discharges from the antrum.

The pulp canals of an offensive tooth of this kind are filled with putrescent matter that empty their foul contents and gases unceasingly into the antrum. The septic matter then passes tardily on to its only way of escape through the nose. Nature cannot take the case in hand and cure such a diseased tooth. The antrum may be opened and thoroughly irrigated and the condition thereby greatly improved, yet a complete cure cannot be expected until the diseased tooth is either extracted, or its canals opened, medically treated and properly filled, and thereby remove the *cause* of the malady.

A few cases in practice will illustrate more fully the points I wish to make in this paper.

Case 1.—Mrs C., forty-five years of age, wife of a clergyman: had suffered for eight or ten years with a heavy dull pain in her right cheek—between her eyes and in the frontal sinuses. She had been treated much of the time for nasal catarrh with only temporary improvement. Her breath was insufferably offensive; she did not relish food, and her health had become greatly impaired.

The physician who was at this time attending her requested me to make a careful examination of her teeth. On doing so I found the second upper molar on the right side badly decayed, with pulp dead, and the cavity of decay clogged. There being no fistulous opening upon the gum, I concluded that the hidden discharge was taking place into the antrum.

On more careful inquiry I learned that just preceding the catarrhal difficulty some eight or ten years before, she had suffered intensely from toothache, accompanied by atalgia, which subsided in a few days, after which the tooth became sore, the jaw commenced swelling, a chill and fever followed and for several days the lady was confined to her room.

At length her right nostril commenced discharging corrupt matter, after which the acute pain and the swelling of the face subsided, and the chronic form followed as described above. I had no hesitation in diagnosing the case as abscess of the antrum involving to a considerable extent the entire nasal fossæ. I at once extracted the offending tooth and found that the socket of the palatine root opened directly into the antrum.

On injecting warm water into the sinus through this opening, a large quantity of purulent matter came gushing from the right nostril. This was repeated several times until the water came away clear. The socket was then plugged until the following day, to keep it from closing, the patient being directed to lie on her left side much of the time at night, so that gravitation would aid in draining the fluids from the antrum. The day following the antrum was carefully explored and cleansed with an antiseptic irrigation, and two days later the same treatment was repeated.

The lady then returned to her home in a neighboring town, where the same treatment was continued for a few weeks by her family physician, when the disease entirely subsided.

In a few months she and her husband visited my office for the purpose of reporting a complete cure, and to express their gratitude for the treatment received. She informed me that the distressing feeling under the "bridge of the nose," and the discharge from the posterior nares were loth to give way. And I may here state, that in most of the cases I have treated, that the effect of abscess of the antrum in neighboring parts, especially in cases of long standing, yield to treatment more tardily than the abscess of the sinus that caused it. This is doubtless because of the inaccessibility of the ethmoid region, making thorough irrigation and medication difficult to accomplish.

In this connection let me again quote from Dr. Bosworth's paper.

After relating a number of aggravated cases of ethmoid and antrum complications, a few of which he reports as cured, while the others had either not returned or were still under treatment, he concluded as follows: "And although in these cases the ethmoid affection was suspected, the diagnosis was only rendered certain by the fact that the pus discharge persisted after the antral disorder was brought under control."

A number of cases in my practice might be given here to illus-

trate the fact that Dr. B.'s diagnosis was by no means "*rendered certain*" because of the conditions he relates.

The case just reported and the one I will now relate will illustrate this point.

Case II.—Mrs. Y., aged fifty-two, had suffered for many years from nasal catarrh, with dull heavy pain in the cheek, mattering of the eyes; and a distressing feeling in the ethmoid region.

She could not recall the time when this trouble commenced, but the purulent discharge from her nostrils had been of long standing, and year after year grew worse, with continually failing health.

She was keenly sensitive about her condition, knowing that her breath was exceedingly offensive and must be annoying to her family.

Believing from the history of the case that the origin of the malady was from diseased teeth, the roots of a pulpless molar and bicuspid were extracted, and the antrum perforated through the alveolus of the extracted molar.

Warm water was then injected into the antrum, but, at first, only a very slight discharge came from the nose. Enough escaped, however, to indicate the purulent condition of the sinus.

At another sitting warm water was forced into the antrum until a large cheesy looking plug passed into the nose, filling one nostril so full that it required considerable effort to remove it. After removing this obstruction a large quantity of offensive matter was discharged from both nostrils. By making a bellows of her cheeks, air was then forced through the perforation into the antrum and out through the nose, producing a whistling sound.

The feeling of pressure so long experienced at that point was now relieved, and irrigation of the antrum was easily performed.

The osteum between the sinus and the nasal fossa was greatly enlarged from loss of tissue at that point, and the plug above referred to was doubtless lodged there.

The septum of the nose was perforated, and the following indications led me to believe that the ethmoid bone had lost considerable of its cavernous structure. As evidences of this her voice had not the usual resonant sound, and the sense of smell was almost entirely gone, and, besides this, the air she inhaled and exhaled through the nose seemed to pass freely through an open canal. instead of a passage filled with convoluted walls, like the normal nasal fossæ.

After the first treatment a piece of wrapping cotton, such as grocerymen use, was doubled four times and twisted tightly together, making quite a heavy cord. One inch of this cord was cut off and tied with waxed dental floss and then sterilized, after which one end of it was dipped into a solution of carbolic acid and then introduced into the antrum through the opening that had been made, while the other end was left engaged in the socket of the root that had been extracted. The dental floss that had been tied around this short piece of cord was then fastened to a neighboring tooth. This, of course, was removed at every treatment, and a fresh piece introduced in its place.

This appliance answered the desirable purpose of keeping the antrum open, and at the same time leaving a suspicion of carbolic acid in the cavity under treatment.

A cleansing antiseptic wash was used from two to four times a week for nearly two months, when the abnormal discharge from the antrum subsided, while the condition of the nasal passages was greatly improved.

The usual methods of washing out the nasal fossæ were resorted to by the lady herself, and in a few months the entire difficulty subsided, leaving only the results of lost tissue spoken of above.

I have treated several other cases similar in character to the one just related, that might be reported here, but to do so would be an unnecessary repetition.

It is sufficient to say that in each of those cases the ethmoid and antrum disease was traced directly to diseased teeth, and in each case the ethmoid difficulty was last to give way, though not the seat of the disease.

The writer above referred to, in speaking of the swollen condition of the middle turbinated body in the cases he reports, says, "That the diseased condition of the mucous membrane covering the middle turbinated body in these cases is to be regarded as a symptom of ethmoid disease rather than as constituting an independent marked lesion."

It should be remembered that the middle turbinated body is a part of, and belongs to, the ethmoid bone. So if that body is diseased we may well suspect that other parts of the bone are involved also.

That "an independent morbid lesion" is rarely found here I believe to be true, but instead of looking into the hidden cells of

the ethmoid for the lesion, I should rather expect antrum disease from dental lesion to be the cause.

When an acrid flow from the antrum is for years thrown upon the mucous membrane of the nose at that point, it is not strange that we should find in such cases a morbid condition of the membrane covering this body, as well as a degenerate condition of both the soft and hard tissues which surround the opening from the antrum into the nose.

Nasal polypus usually commences here, and so far as I have been able to determine the osteum has in these cases become greatly enlarged from destruction of the mucous membrane and the fragile bones immediately surrounding the opening.

The carious, or it may be the necrosed condition of this frail structure, is a sufficient cause of irritation to produce morbid growths at that point which are liable to close up the only outlet from the sinus, making it a closed cavity, with the most serious consequences in store for the unfortunate sufferer.

Some years ago one of my patients said to me, "I used to be able to whistle through my nose." On asking for an explanation she said, "I had an upper molar tooth extracted and for weeks after the operation I could extend my cheeks with air and produce a whistling sound through my nose."

On further inquiry I learned that at the age of thirteen or fourteen years she had a severe attack with toothache in a first upper molar, after which her face became greatly swollen and a physician was called. She was told that she had erysipelas (?) After a few days' treatment she got better, but a purulent discharge from one nostril followed. This, she was told, was the result of a gathering in the head—the sequel of the disease.

She was soon well again except the frequent discharge from her nose, which grew more offensive as the years passed by. At length her health began to fail, and she was believed to be going into a decline. The symptoms she gave me were similar to those I have described in the cases above reported. The tooth had by this time almost all decayed away, and she had repeatedly expressed a desire to have it extracted, but her physician forbade the operation because of her ill health, telling her she must wait until she became stronger.

A few years later, however, she went to a dentist and had the

roots extracted, and immediately afterward she was able to produce the whistling sound through her nose above referred to.

My readers have already diagnosed the case as abscess of the antrum, and I need scarcely add that the swollen face was but the forming of the abscess which opened into the antrum, and then little by little the sluggish discharge passed on to the nasal outlet. In less than a year after the tooth was extracted the nasal catarrh entirely subsided without any treatment whatever. After the *cause* was removed, *nature* performed the cure.

In such cases it is safe to say that the chances of a cure, especially in cases not too far advanced, are greater when the *cause* is removed, and then left to nature without treatment, than the most persistent care in cases where the lesion has not been discovered and consequently not removed.

Of course frequent cleansing of diseased parts will greatly modify the disease, but cannot entirely restore to health with the aggravation still existing that produces the abnormal condition.

In conclusion then I would say that a correct diagnosis is of first importance. We should seek well the cause of the pathological condition to be treated, and then hasten to remove it, and more than half of our work has been accomplished. Our success has well nigh been secured. We have only to aid nature in her benign work, and suffering humanity will often bestow laurels upon us, that largely belong to her.

PROCEEDINGS OF SOCIETIES.

DINNER TO THE EXECUTIVE COMMITTEE OF THE WORLD'S COLUMBIAN DENTAL CONGRESS* BY THE FIVE UNITED DENTAL SOCIETIES OF CHICAGO. —THE SPEECHES.

January 12, 1892, the Five United Dental Societies of this city gave a dinner at Kinsley's to the Executive Committee of the World's Columbian Dental Congress. There was a large attendance. The members and guests began to arrive at 6:30 P. M., first going through the usual preliminaries of handshaking, the exchanging of ideas, the making of new, and renewing old, acquaint-

* At the recent meeting of the Committee the word "Congress" was substituted for "Meeting," hence that term is used throughout these speeches. --Ed.]

ances. Shortly thereafter they filed into the dining room and wrestled with the very attractive and palatable articles that were on the *menu*. Each course was followed by a musical selection, rendered by one of our city mandolin orchestras. The tables were artistically, though not profusely, nor elaborately decorated. It was a truly representative dental gathering, characterized by good fellowship, unity and harmony. Around the festive board sat editors, authors and professors, some of the brightest intellectual stars that adorn the dental profession. That the members of the Executive Committee have been, and will continue to be, tireless in their efforts to make the forthcoming Columbian Dental Congress a grand success both scientifically and socially, the speeches herewith given *in extenso* amply testify.

Shortly after 9 o'clock, when the members and guests were about to light their fragrant cigars, the Toastmaster, Dr. W. A. Stevens, of Chicago, rapped for order, and delivered the following brief Address of Welcome.

Gentlemen: I am delegated, as you will see by the programme, to extend a welcome to our guests by the Five United Dental Societies of the City of Chicago. It would be well if I knew more, that I might give to each and every one that cordial welcome which our city extends to the Executive Committee of the World's Fair arrangements for the great dental congress in 1893. We hope that America herself will extend to the whole world that same cordial reception which we extend to the Executive Committee. Again, gentlemen, I extend to you a hearty welcome. (Applause.)

I have the pleasure of introducing as the first speaker of the evening Dr. J. Taft, of Cincinnati, who will respond to the toast, "The Success of the World's Columbian Dental Congress Largely Depends Upon the Attitude of the Dental Press.

*I have an arrow that will find its mark,
A mastiff that will bite without a bark.—Emerson.*

DR. TAFT was received with applause. He said:

Gentlemen of the Five United Dental Societies of Chicago.—I can occupy your time but a few moments as I must leave very shortly. I had hoped that the order on the programme might be observed, and that I would slip out without being called upon, or would not be here when called.

Whenever any great enterprise is undertaken and carried forward in the world, the means by which it is accomplished is always a matter of interest, and the great enterprise that is being inaugurated and that will be carried forward in this city is not an exception in this respect. The part that our profession will take in this great exposition, the Congress it shall hold, will be accomplished through means of various kinds. It ought to draw, and I think will draw, out the interest and coöperation of the whole profession—at least, those who are interested in it. And it will behoove us if the work is accomplished as it ought to be, such as shall truly and fully represent this young and growing profession, to endeavor to have the effort and the interest of every member of the profession in some way or other. From communications that I have had with the profession during the last few months, there is great ground for encouragement in the coöperation which will be afforded this enterprise. It has been my privilege to have direct communication with about three hundred prominent members throughout all the States and Territories of this Union, with two or three exceptions. Enthusiasm is everywhere manifested, and if we may judge from the interest shown, from the promises made, and really from the efforts that are being put forth by some, we may rightly anticipate great results. I speak of this as encouraging. It shows us that there will be coöperation in the profession throughout the country.

Of the means and agencies that will help on this work in the great forthcoming exposition, the work which will be accomplished, perhaps there is no one instrumentality, no one agency that will be more subservient and that will be productive of more and better results than the press. The press has come to be in the world of progress a mighty influence which no man can estimate. It reaches everywhere, from the highest to the lowest. There is no occupation of life scarcely in which the power of the press is not coöperative, in which its influence is not called forth for support and for promotion in carrying on great enterprises. Indeed, many of the enterprises of the world are made or destroyed by the power of the press.

Now, in the work which the dental profession is aiming to do in connection with this great enterprise the press will be an active aid. The general press will accomplish as much perhaps for this branch of the work as for any other; but then, I suppose, in the as-

signment of this topic, "The Dental Press," the periodical literature of our profession was the matter or agency in the minds of the committee when they selected me to respond to this toast. I can only say, that I am sure the dental press will coöperate in this respect to its utmost ability. (Applause). I think I can speak for my brethren of the press, that there will be hearty coöperation by the thirty or forty dental journals in this country, and perhaps in other countries as well, for carrying on this work and making it what we hope it will be, the greatest convocation of dentists that the world has ever seen—one the like of which will not again be seen in the day of any of those present to-night. (Loud applause). There will not likely, in our day, arise an occasion again for an exhibition of the profession such as we have now in contemplation. It behooves us, therefore, to improve all the opportunities, to draw together and utilize and make subservient all the forces in the profession for the accomplishment of this end in the highest degree. The dental press will serve this purpose to its utmost. It has not accomplished much as yet; the time had hardly arrived for a special agitation of the subject. But the time has now arrived when the organization is more complete than heretofore, when it is proper to make an announcement to the profession and when it should know all that is going on.

The executive committee, it appears, has been laboring for the last year or more to bring the organization for this work into an operating condition, a condition where it will, upon presentation to the profession, command their attention, their interest and coöperation, and I am happy to say on behalf of my *confreres*, that all of us who have been working in arranging for this matter, that it is brought to that state of organization now when it would seem to be eminently proper and desirable that the present status of the work should go to all of the men of our profession. I am sure that what has been accomplished in this respect will meet with the hearty approval and support of the entire profession.

The harmony that has prevailed in the executive committee at all of its meetings, from the beginning to the present, has been remarkable indeed. It would be impossible for any number of men that could be brought together and upon any subject to harmonize better than they have done in the making up of this organization. It is high time that this should be made known throughout the length and breadth of the land; and every dentist who has an in-

terest in his profession, every one who seeks its promotion and who would have it stand forth to the world in 1893 for what it is worth, should have an interest in the work. So it becomes eminently proper that the press should be used to its full power for disseminating knowledge in reference to this matter and stimulating an interest in it for bringing about and securing the coöperation of all members of the profession. Gentlemen, we ask your coöperation; we ask your support in all this work, and let us make it one of the grandest and greatest occasions that the world has ever witnessed for the progress and upbuilding of dental science and art. (Loud and prolonged applause.)

THE TOASTMASTER: I have the honor to present to you as the next speaker a gentleman from New York City, Dr. W. W. Walker, Chairman of the Executive Committee. The toast is "The Development of Ideas for the World's Columbian Dental Congress of 1893."

The general himself ought to be such an one who can see both forward and back.—*Plutarch*.

DR. WALKER, on rising to speak, was received with applause, and, when quiet was restored, spoke as follows:

Mr. Toastmaster and Gentlemen of the Five United Dental Societies of Chicago: When one of your committee-men, Dr. Pruyn, welcomed us at the hotel Monday morning he handed me a little slip of paper, and said it was simply an invitation to respond to a toast, and I told him at the time in a little haste, as I was detained some hour and a half, that I would only be to happy to do so. Now, that the time has arrived for me to take my part in the banquet, I scarcely know what to say or where to commence. It has been perhaps one of few opportunities thus far afforded the Chairman of the Committee to start in on the programme of making speeches, which we may have to make as regards the World's Columbian Dental Congress. You must remember that this World's Columbian Dental Congress of ours is still in its infancy. As our illustrious friends, Professors Black and Sudduth, might say, "it is in an embryonic state," but nevertheless it would be wrong for us as a committee to say what we expect to do. It would be wrong for us to prophecy what we expect to do; but we might give you an idea of what we would like to accomplish. In the first place, the most important factor that we have to contend with—and I say it honestly and frankly—is harmony. Unless we can have harmony

in our midst we cannot make a success of the Congress. (Applause). In dental institutions and in dental societies, in whatever rank of dentistry we are, we must try and harmonize the members, so that they will work in unison for this great cause. If there has been at any time in any of our dental associations dissension of any kind, now is the time to eradicate it and put our shoulders to the wheel and work nobly and honestly, not for any one individual, but for the benefit and welfare of the dental profession and the World's Columbian Dental Congress. (Applause.)

The Executive Committee have been working with diligence and zeal in appointing several committees, and I am happy to inform you that we have nearly completed the appointments of the different committees throughout the United States and Europe, or, we might say, throughout the entire world. We have been careful in appointing committees that would work well and work in harmony together. I know that those who have been appointed on such committees will appreciate that when they receive the official communication from the Secretary. If all this be accomplished, if harmony exists throughout the United States, we will all meet here on the 17th of August, 1893, and it will be our pleasure to represent not only to the world at large, but to our dental friends and brethren throughout the world, that we are an independent profession. This meeting will be independent and purely dental, and we will demonstrate from a practical and theoretical standpoint that we stand preëminently alone, as a dental profession.

I want to say one word to the younger members of the dental profession of this city. I want to ask them if they have ever thought for a moment of the inheritance that has been left them by the older members of our profession, those members who have grown old and gray, and that have burned the midnight oil in their endeavors to assist the younger members of the profession. Many of our oldest members that have passed away, as for instance, Dr. Atkinson, and I could mention others, have worked with diligence and zeal to place dentistry where it belongs. It rests with the younger members of the profession not only to keep the standard aloft where it proudly stands, but to elevate it still higher, so that when this dental congress has become a thing of the past, those that have been connected with it can only say that the committees appointed have done their work nobly, and go home with the stamp

of success upon their brow. It depends vastly upon the gentlemen here to accomplish this act.

There is one thing I want to say, that I have been waiting for an opportunity to say for many months, or, I might say, years, and that is, I appreciate the friendship that has existed between my Chicago friends and myself, and I hope nothing will ever occur to mar it. I hope it will become stronger from year to year. I thank you, Mr. Chairman and gentlemen for your attention. (Applause.)

THE TOASTMASTER: We will now listen to our esteemed friend from the east, Dr. L. D. Shepard, of Boston, the toast being "'Tis Money Makes the Mare Go."

"He that wants money, means and content, is without three good friends."—*Plutarch*.

DR. SHEPARD arose amid much applause. He said:

Mr. Chairman and Gentlemen of the Five Dental Societies of Chicago: I consider it an especial honor that I am one of the few selected to speak this evening, and I think your committee has shown great wisdom also in placing my name among the early ones of the speakers, for they must have known what is generally known that, when such eloquent men are on the list as are on the list to-night, I have one virtue which has been told us is the "soul of wit," and that is brevity. I cannot understand why I have been selected to respond to this toast. It would certainly be most fortunate for me—and I should esteem it a great privilege—if I could claim to represent the class which has money, means and content. You doubtless remember the story of the clergyman who borrowed a ten dollar bill every Saturday night from a parishioner and returned it every Monday morning, saying he could preach better when he had money in his pocket. That is undoubtedly true. Our poet who is on the programme is nameless in regard to that, as we know that so distinguished a man as the late Wm. Shakespeare tells us, that if one has not these three things, *viz:* money in the pocket, meaning ready cash to meet any call upon him at the moment; *means*, which here implies invested property from which he can draw ready cash if he needs it, and *content*, he is wanting in three good friends.

My familiarity with the younger members of the profession in my own section of the country—and I trust it is the same here and elsewhere over the country—is that the younger men differ largely

from the older practitioners who have passed away or are passing away, in that they are thrifty, provident men, and good business men. They generally have some money in their pocket. In my own section they have generally bought the houses where their offices are located, and consequently have means and are good citizens because they are land owners; and thanks to the dental colleges, thanks to the dental societies, thanks to the spirit of enterprise and improvement which has prevailed during the last thirty years. They are generally contented men, because they feel that they are doing in the community a work that is valuable to it, and they are doing it well. I suppose though, as a matter of fact, that I am assigned to this subject because (through the mistaken idea of my *confreres* or some other cause) I have been placed as Chairman of the Finance Sub-Committee of the Executive Committee.

Now, gentlemen, it is a pleasure for me to state to you that before a year has passed you will all hear from me, either personally or through some representative connected with the committee. I suppose I was placed in this position because my friends recognize that I possess, as an ancient philosopher by the name of Plato has perhaps exemplified more fully and beautifully, three cardinal principles of faith or character—a combination of optimism, egotism and fatalism. Gentlemen, I admit that if that was one of the reasons why you selected me, I will plead guilty to the charge. The optimist, in looking over the face of nature, in looking at all the currents and countercurrents which are passing through the surface of things, recognizes that everything is for the best. The egotist, with sublime confidence in himself and with appreciation of his capacities, knows that he is the best; and the fatalist, with a confidence in things to come as well as things present, knows that everything will come about as it should whatever he does or whatever he says. With these combinations in a man he certainly is apt to make a good beggar, and this is a compliment undoubtedly to those qualities which my friends recognize as belonging to me. I shall do all in my power to support and carry out the work you have assigned me. The press will do all it can to urge the work forward and support it, but unless the sinews of war are furnished, we shall fall short in accomplishing the object we have in view.

Gentlemen, for twenty-nine years I have given one-twelfth of my productive energies to dental progress. As a professor for many years in a college, as one who has attended dental meetings

frequently and in other capacities, I have contributed my mite toward the work of professional progress, and I have this to say, I feel that every man who has done the same thing can testify to the same truth, that the man who works for others, the man who works without seeing a return come back to him directly is the man who is a great gainer in the work of life. We may hoard money, but it will pass away from us. No man can take from us the growth, both intellectual and spiritual, which comes from labor in which no return is seen and in which the motives which possess one must be of a higher order than those of a pecuniary nature. (Applause.)

DR. J. Y. CRAWFORD, of Nashville, Tenn., responded to the toast, "The Congress of '93 as an Educator."

The man who seeks one thing in life, and but one,
May hope to achieve it before life be done;
But he who seeks all things, wherever he goes,
Only reaps from the hopes which around him he sows
A harvest of barren regrets.—*Lytton.*

Dr. Crawford was heartily received. He said:

Mr. Chairman and Gentlemen of the Five United Dental Societies of the City of Chicago: I must be excused for saying that I am peculiarly embarrassed on the present occasion in being called upon to respond to the question of education so far as its influence may be exerted by the great Congress in '93. Recognizing the fact as I do, that I am in the presence of men who teach in the universities of this great country, I can but be pardoned for being embarrassed when I think of the importance of the question to which I am to respond. When I think of the particular influence it plays in the maintenance of our free institutions in this country, there is awakened in me an enthusiasm and a degree of moral courage that amounts to, in my own individual realization, a work of supernatural character. Education, from whatever standpoint you may view the question, should be and is sacred, though given to the American character. (Hear, hear.) Take the question and follow it out from the present back to the first recorded instance connected with humanity—wherever you find education fostered by a people you find that, comparatively speaking, they prosper. Wherever you find a nation of people disregarding the influences of education, you find them retrograding intellectually, morally and physically. (Applause.) The question of human longevity depends largely upon a proper understanding of the great question of education. It is for

us to know in casting 'round and observing the events of human life and human history, that within the last fifty years human life has been greatly prolonged, and by the influence of education in all departments, but more particularly, let me say from a dental standpoint, in my humble judgment dental education has done as much, and perhaps more, to increase the average length of human life than any other one question pertaining to education. What does it mean? Education means to learn how to live in accordance with nature's laws, so that from the crown of a man's head to the sole of his feet there will be unity of action, not only physically, but psychologically and morally; because, let it be known that one of the men who believed and adhered to the original doctrine announced centuries ago (the man who drank hemlock as the result), made the announcement that man was immortal, and that by virtue of his immortality his nature is three-fold, not only physically, but psychologically and spiritually; and be it known that the age in which we live and the education that we support is an education that recognizes in man the three elements to which I have referred, and that his immortality is a conspicuous characteristic of his wonderful maker.

If I had to die but for one single conviction in the world, I would say let it be for my belief and confidence in the idea that man is not only physical and mental, but that he is spiritual. If he be spiritual, may it not be that to-night there is a spirit looking down upon the things that are now occurring here; that from the great beyond there is a character that we all loved while he lived? I refer to the distinguished, sainted Dr. Atkinson. May he not be looking down upon what is occurring and wishing us God speed in the grand work we are undertaking for the World's Columbian Dental Congress, which we trust will be one of the greatest and grandest convocations of dentists that has ever assembled upon the face of the earth? (Applause). Dentistry, what does it mean in its broad and comprehensive sense? Should the world be educated upon this question? What kind of men should fill its ranks? They should be men by virtue of their education, their mental attainments, understanding more of the laws of health and living than any other class of men in the world. They have to deal with the machine that prepares pabulum for the building up of bone, skin and muscle—that has to go through the process of triturating and grinding the food out of which the organism is to

be built. The idea is that the influence of education ought to be so exerted by this grand, approaching congress, that those of us who take part in its deliberations ought to be benefited as well as the entire human family from one end of the earth to the other. The public at large should feel the good results and benefit which shall accrue from this great gathering. It ought to redound to an aggregate increase of human life. Think about it! Every department of learning and of interest to mankind will be represented, where? In the magnificent city of Chicago, resting upon the western shores of your beautiful lake, with your buildings so high as to command admiration. I counted some of the stories of your high buildings to-day, and I think one was sixteen stories high in a city that is large enough to maintain a dental profession of over 600, and ought to have three times that many; a city that has five dental societies for the advancement of education; a city that since 1836 has grown to such magnificent proportions that she to-day has more than one million of people. In less than half of a century over one million of people are engaged in developing the most magnificent enterprises, in building the tallest houses and in equipping and fixing for the reception of the world the most magnificent entertainment that has doubtless ever been known in the world's history. Why, of course, it will be a magnificent enterprise so far as education is concerned. It is the duty of the dental profession of America to go hand in hand and work in unison that this magnificent movement shall put upon foot the means by which the dental profession of the world can be entertained in a way that will expand its entire organization mentally, physically and otherwise; so that we will gain a sufficient amount of strength to go forth in the further performance of the arduous duties that rest upon us; so that within a few years we can be regarded by the public to a much greater extent than we now are as the proper custodians of the public health from a sanitary standpoint.

Proper sanitation is proper education. From a sanitary standpoint the dental profession sustains a more important relation to modern civilization than any other one profession known to the world. It is a significant fact, that it is only within the last few years that logical science has received any attention at the hands of the scientific world from a practical standpoint. May it not be that the disregard of the practical art of odontology has been a more conspicuous fault than anything else? It has been said that

if America goes into decline and crumbles to the dust, the diseases over which you and I of the dental profession have control, are more responsible for it than any other deleterious influence. This may be correct or may not be. But judging from a philosophical standpoint, I am bound to conclude that the gentleman who made the statement was right. Then if there is such danger ahead of us, in the name of all that is right, in the name of all that is sacred to the human heart, let us elevate our profession from an educational standpoint, and make the approaching Columbian Dental Congress a potent influence for good. (Loud applause.)

DR. H. J. MCKELLOPS, of St. Louis, responded to the toast, "Unity of Action is Necessary to the Success of the World's Columbian Dental Congress."

We must all hang together, or assuredly we shall all hang separately.—*Franklin*.

He was received with applause, and said:

Mr. Toastmaster and Gentlemen of the Profession of Chicago: It is not my forte to make speeches, but it is my forte to be with those of my profession whom I love so much. (Applause.) As this toast calls for unity, and in "unity there is strength," it is necessary for the success of this great undertaking that we are now about to enter into, for us to stand together each and every one. In this broad country of ours which we travel over, as I do, where I visit my professional brethren from one end of it to the other, there is hardly a State in the Union into which I have not been with regard to my profession—and I was going to say hardly a man in it that I do not know. But with all that, when I look around, when I go abroad, when I stand and see what is being done and the progress that this glorious profession of ours has made, it fills my heart and soul with joy. My friend, Dr. Taft, has said, this is to be the grandest event that the world will ever see. I say, no! It will simply be a rosebud in our profession. When I look around and see the young faces that will bloom and see the roses which we have brought up as buds, I say how beautifully those roses will blossom some day. This is true of the younger members of the profession. Go where you please, travel in any section of the country, especially abroad, and you hear more or less of this glorious profession of ours. We need to be proud of it. Every man in the profession should not think of himself alone, but he should open his doors and invite everybody in and extend the hand of

welcome, and say "here, gentlemen, is the success of our profession." We stand together. We assist each other, therefore I open my doors for you to come in and see what I do. When I look back years ago to the struggle which I went through to get into this profession, having watched its progress since as it has bloomed into manhood; having seen the bright lights of the profession shining around us and having thought of the many that have passed and gone, I tell you my heart feels sad.

We have a great future before us. We have everything that is bright. We have one of the grandest professions the world has ever seen. I say to you gentlemen, let us stand shoulder to shoulder and don't give up. As my Texas friend says (meaning Dr. Storey), "Mack, we young men must stand together." (Laughter and applause.)

THE TOASTMASTER.—We will next listen to the youngest member of the dental profession in the City of Chicago, Dr. W. W. Allport. (Laughter.) He will respond to the toast, "A little neglect may bring mischief."

I repeat that in power is a trust; that we are accountable for its exercise; that from the people, and for the people all springs, and all must exist.—*Disraeli*.

Dr. Allport was enthusiastically received. He spoke as follows :

Mr. Toastmaster.—I assure you sir, that I should not have left my sick bed to come here this evening had it not been for my desire to pay my respects to our distinguished guests as well as to, so far as the presence of one person could do so, say to the Executive Committee of the World's Columbian Dental Congress that the dentists of Chicago are entirely united in their desire to make the great meeting to be held in this city in 1893, the grandest congregation of dentists ever held in the world. (Applause.)

The toast I am to respond to says, "A little neglect may bring mischief." An important factor in bringing success out of an undertaking is money, and to have the financial part of the undertaking managed with ability, fidelity and sterling integrity.

The neglect to provide for which, is certain to result in a partial or total failure.

It happened to fall to my lot previous to the meeting of the International Medical Congress held in this country several years ago, to have something to say as to who should be at the

head of the Finance Committee of the dental section on that occasion. After looking the ground over very carefully, Dr. Taft, the President of the section, assigned that position to Dr. Shepard, the same gentleman that has been placed at the head of the Finance Committee of the World's Columbian Dental Congress. With the knowledge I have, permit me to say that, in my judgment, a better selection for the former or the present position could not have been made. His former work was an unqualified success. When we finished our work we had the largest fund in hand of any of the sections, and when the Publication Committee found they were short of money to complete the printing of the transactions, our section, at the hands of Dr. Shepard, turned over to this committee a check for \$1,000, a thing that no other section did, and the transactions soon appeared in good form.

Dr. Shepard has his own way of doing things, and he will not do them in any other way. He carefully considers the matter and makes up his mind as to about how much money he will require.

When he has done this and made up his mind as to those who ought to contribute, and has sized them up, he goes straight to them with cheek, if you please to call it by that name, enforced by a knowledge of the facts, and tells them just what he wants. And let me say it will be just as well for us to lay aside a little fund for him, for when he calls or writes to us, he will expect money, and the sooner it is paid the sooner will he be relieved from annoyance and the sooner will our obligation to our profession be discharged.

But it is not always that a little neglect brings permanent mischief. It is often the reverse. Had not the historic Mrs. O'Leary neglected to milk her cow until after dark, and had she not then neglected to put her lamp out of kicking distance of her bovine, Chicago would not, the next morning, been in ashes, nor would there upon the ruins of that night arisen our new Chicago, the most wonderful, as well as one of the most magnificent cities upon the face of the earth. It is in this grand city that the Dental Congress of 1893 is to be held, and it devolves upon every one of us to not only do what we can to promote harmony in our ranks, but to do whatever may be right to make the meeting a grand success.

I want to remind you all, that this executive committee was selected from the two leading dental associations in this country and that its membership is composed of our very best and most representative men. They are truly of the profession. In no

event in the history of the world has there ever been confided to any fifteen dentists such important interests as are now reposed in this committee, and it gives me unspeakable pleasure to say that the sacred trust confided to them seems to be fully appreciated. That politics will have no place in their counsels and that every duty that may fall to them to discharge will be performed with such intelligence and fidelity that when the Congress is a matter of history we may be able to look back upon it with pleasure and satisfaction. (Loud applause.)

The Toastmaster then introduced Dr. Storey, of Texas.

“THE SUNNY SOUTH.”

“Know ye the land where the cypress and myrtle
Are emblems of deeds that are done in their clime,
Where the virgins are soft as the roses they twine,
And all, save the spirit of man is divine?”

The band played “Dixey” and DR. J. C. STOREY, of Dallas, Texas, arose amid much applause, and responded to the above toast. He said: *Mr. Toastmaster and Gentlemen of the Five United Dental Societies of Chicago:*

“Some feelings are to mortals given,
With less of earth in them than heaven.”

Some good fellow once said that all along life's beaten pathway there ever and anon arose some point more prominent than others, a mile stone to which in after years he might look back with grateful memories, and from which he might date events that reminded him of the joys he had tasted. This banquet, gentlemen, is one of those high points in my life's journey to which I will always refer with happy thoughts, as marking my first visit to Chicago.

I appear before you to-night, under circumstances peculiarly embarrassing. The theme assigned me is one that has inspired the brightest intellects that ever did honor to American oratory. It was on a festive occasion of this kind in the city of New York, that the late Henry W. Grady delivered an address which wrote his name high on the temple of fame, and at once proclaimed him among the great men of the nation. Mr. Grady spoke to the New South, and here let me disclaim any desire to detract from his illustrious name, nor would I lower one line, that marble shaft, which commemorates his memory, but I speak to the Old South—the same Old South it always was, and always will be.

" Know ye the land where the cypress and myrtle
Are emblems of deeds that are done in their clime,
Where the virgins are soft as the roses they twine,
And all, save the spirit of man, is divine ? "

Yes, in that beautiful Sunny South all the spirits are divine save those which come from Lincoln County, Tennessee, Bourbon County, Kentucky, and Peoria, Illinois.

Geographically we stand unchanged as in the days when Columbus landed on San Salvador, and we are to-day the same Sunny South we always were—barring the robbery which took from our people the accumulated wealth of centuries, and despoiled us of all save honesty of purpose and integrity of character—we are the sons of the same fathers who sent the Indians to their reservations, felled our forests and made our country to bloom and blossom as the rose. Ask the records and they will tell you that our successful business men in all the vocations of life are of the Sunny South. The same Old Sunny South whose genial sun and lovely clime, whose lowing herds and waving grass, whose flowering shrubs and singing birds, whose brave men and beautiful women proclaim it God's Country—Its people, God's people. Yes sir, ours is a grand country—a magnanimous people—great in enterprise, and in genius wonderful. 'Twas the south that gave to this country its Democratic Government, and there to-day you find it in all its purity. In the arts and sciences the south has asserted and maintained her preëminence. Of these, to mention all would consume too much time—suffice it to say a Texan gave to the world that most wonderful and useful food product—condensed milk—and to your city one of her most philanthropic citizens, his son, Lee Borden. A Virginian, gave to Agriculture its most useful machinery. The mower and reaper, and added much to the push and enterprise of your own Chicago. A McDonald, of Kentucky, a Sims, of Alabama, and a Battery, of Georgia, have contributed more to gynecological surgery than all other scientists have done in all the annals of time. 'Twas Georgia's Crawford Long who gave the world anæsthesia which has robbed the surgeon's knife of its sting and emphasized the discovery as man's greatest boon. But I must turn me from her inventive genius and look in another direction—glancing at her oratory, her statesmanship and her chivalry. Where, let me ask, do you find such a combination of orator, statesmanship and soldier as were embodied in the person of John

C. Breckenridge; or who could equal W. L. Yancey as he held his hearers spell bound with his silvery tongue? One, and one only, Judah P. Benjamin, of Louisiana, of whom it was said that even the world did not possess his peer. These, and a host of others I might mention, gave character to the nation's eloquence as they made her halls of legislation echo with their matchless oratory.

And now let me ask, kind readers, who are the young men of to-day in the South who are adding splendor, aye, even overshadowing these great men who have gone before? Cast your eye if you will, into the political firmament; look at it all along the line from one end of the horizon to the other; tell me, if you can, how many of these brilliant stars who are ever and anon coming into view, tell me how many are *not* sons of these same old southern fathers. The echo will answer, how many. As to southern chivalry, southern bravery, many of you before me to-night, having seen the glitter of their bayonets and heard the whistle of their bullets, can and will attest. And the south to-day has the finest citizen soldiery on the American continent. Does not our own Woozen-craft hold the highest prize for the best drilled battery of Artillery—the Dallas Artillery—and the Houston Light Guards have they not been ruled out of competitive drills in the line so often have they been winners? And permit me to say that should the American eagle feel a little Chile (chilly) just let him utter one scream and fifty thousand Texans will bid him perch aloft on the Goddess of Liberty which surmounts the Texas capitol, plume his ruffled feathers and warm himself amid the sunshine of this genial sunny south, while they stand ready to defend his honor and protect his good name with their blood. And, Mr. Chairman, when that south-land shall have fully recovered from General Sherman's march as has Chicago from the kick of Mrs. O'Leary's cow, she proposes to give color to the political aspect of this government and shed a luster all over this entire land such as the world has never seen or even the mind of man conceived.

In closing my remarks I cannot do better than add a stanza from Alabama's sweetest singer, Judge Alexander B. Meeks, of Tuscaloosa.

"Land of the south, imperial land;
Then here's a health to thee:
Long as thy mountain barriers stand
Mayst thou be blest and free.

May dark dissensions banner ne'er
Wave o'er thy fertile loam,
But should it come there's one will die
To save his native home."

DR. A. O. HUNT, of Iowa City, Iowa, Secretary of the Committee, responded to the toast, "Write the Vision, and Make it Plain upon Tablets, that he may run that Readeth it."—*Bible*.

Dr. Hunt, on rising to speak, was heartily received. He said:

Mr. Toastmaster and Gentlemen of the Profession of Chicago: There is unquestionably some mistake. I think, without doubt, that the Toastmaster, or those who assisted in arranging the sentiment of my toast have been in close conference in this matter. I have been laboring, while in Chicago for the last few days, under the effect of a case of mistaken identity which has been forced upon me by the Chairman of your Executive Committee; so that his views must undoubtedly have been carried to the Toastmaster and those who are assisting him in this banquet. It seems that the sentiment is taken from the Bible. All of you know that the selection is very appropriate for me, and I suppose the intention was to close this banquet with a sort of praise meeting, and that is the reason that this sentiment has been given to me. It is customary, I believe, for a man in a speech to do certain things; that the one who is appointed to respond to a toast has the privilege of telling a story or singing a song. It is not expected that I shall make a speech on the present occasion, for the sentiment says "Write the vision plainly." I will exercise the privilege of telling a story.

I feel fully as awkward in my mistaken identity as a celebrated actor of olden times in England. He had been out after the performance at the theater to an informal dinner. On his way to the hotel the bishops and the clergy of that section of England were holding a banquet or dinner, and he was invited to go in by some one. He sent his card in, and was immediately invited to take a seat at the table. Having just returned from his informal party, with his white necktie on, etc., one of the bishops mistook him for one of the clergyman, and called upon him to say grace, something he had never done in his life. He was completely nonplussed as to what to say or what to do. He had been trained in the Church of England carefully in his youth and certain things came to his mind, and rather than refuse to say grace, he said "O, Lord, open

thou our lips and our mouths shall show forth Thy praise." (Laughter.)

Another case is related of a clergyman who lived in the country and preached at the various school houses in the neighborhood. One Sunday morning he got up, hitched up his horses, went into the house and changed his clothing preparatory to going to service. While doing so his wife had prepared some milk for the calf. When he came out properly dressed for his divine work, he noticed the pail of milk for the calf. He could not think of leaving the animal all day without feed. He took the pail of milk, put the calf's head into it, and in order to prevent the calf causing any accident, he got it by the ears and pressed its head carefully down into the pail. The calf was drinking, but unconsciously the clergyman pressed the calf's head down a little too far until its nostrils were immersed below the milk. Raising its head, the calf threw milk all over the clergyman, and he said, "If it were not for the love I bear my master, I would break your infernal neck."

The toast says, "Write the vision plainly." The only man I can call to mind who had the power to do that and have it prophetic was the celebrated Robert Burns. Burns wrote a kind of vision, which at the present day shows that he was not only a poet, but also a prophet. I can ill afford to undertake to be a prophet. I cannot write a vision, but this much I can assure you can be done in the interest of the great forthcoming Congress. It will remain with you and the rest of the profession to make the vision—and I have no doubt but that it will be—of such a character that every member of the profession will look upon it with pride. It is no ordinary movement that we are undertaking. Probably never again will we have the opportunity to do so large and so great a work as now. The records of what we do then will remain many years after we are gone. These records should be written plainly, and it requires the coöperation of every member everywhere. When called upon, he should at once respond willingly and cheerfully, and whatever he does should be done carefully.

I am very glad of the sympathy expressed by the Toastmaster for me, that I have to write to all interested in this great work. There is a great deal of assistance to be obtained. I shall not have to do all the work, as much of it will be done beforehand, and I simply shall record the results and perhaps put the proceedings in better shape for record. We cannot say how far reaching a

movement of this kind will be. My friend, Dr. McKellops, has been for the last thirty years making a decided effort to collect the literature of the dental profession. Much of this is difficult to obtain ; much of it, in fact, is out of print or has been thrown away.

This will not likely occur as regards the reports and work of the forthcoming Congress, because whatever we do, in its final wind up the public libraries will contain an account of the proceedings and will offer the results thereof and the records will never be lost. It is important then, that we should write the vision plainly.

I have only this request to make to those who may be present, that it will devolve upon me as the Secretary of the meeting for some little time to send out certain notifications, and I urge all of you here when you receive these notices to give a prompt and careful response, because it will delay our work very materially if you are dilatory in this matter. Remember, there remains much to be done. The committee and others interested in the meeting have to be informed what is to be done. It is the intention of the committee to send out a series of circulars embodying the work done by the Executive Committee. I thank you, gentlemen, for your attention.

At the conclusion of the toasts, several gentlemen were called for to make short speeches. They responded in the following order:

DR. FOSTER, of Baltimore. *Mr. Toastmaster and Members of the Dental Profession of Chicago:*—It is somewhat embarrassing for me to make a speech after you have heard so many eloquent gentlemen. I hope I may be pardoned for saying just exactly what I feel. An eminent writer once said that an "agitated heart" was the vocal expression of ideas. We have had considerable agitation this evening. Like a stone thrown into the lake, the waves have gone forth until they have reached the shore, or until they have reached a response in that heart.

I will say in regard to Baltimore and Chicago that I am half and half to-night. Hospitality in Baltimore is, I think, great; hospitality in Chicago is, if anything, greater. The lower part of me is my own—that is Baltimore. The upper part of me—I think to-night—is Chicago. (Laughter and applause). If there is any other half, that half is alligator. I was very much impressed with the importance of the remarks of one of the gentlemen, who said something to the effect that "all things come to him who waits." The

gentleman who responded to this toast was called upon to do so doubtless on account of being a descendant of John Wesley, the great divine, and that is just exactly where it comes in. You all know the bearing and the likeness he has to that celebrated divine, the purity of character and other greater adornments.

Mr. Toastmaster, I thank you for the many courtesies that have been shown to me, not only on this, but on former occasions. I have never had such an opportunity of meeting the rank and file of workers in the profession except the few I have met at dental conventions. It gives me pleasure to see here so many representative men of the profession—men with character and intelligence expressed in their countenances. We all look forward to the success of the World's Columbian Dental Congress, which will convene in this city in 1893. (Applause).

DR. BARTON, of Texas :

Gentlemen of the Committee and Members of the Profession of the City of Chicago : I am somewhat in the position of Dr. Foster in not having been assigned a toast on the regular programme. I avail myself of the opportunity to thank you heartily not only for myself, but in behalf of this committee for your kindness, consideration and courtesy, and for the way in which you have so well entertained us during the three or four hours since we have been in this hall. It has given us great satisfaction in many ways. I believe that in the interest of the forthcoming Dental Congress that there might be this further thought, that we should endeavor to cultivate a spirit of unity and harmony, if possible. We have seen this unity manifested here to-night by the five dental societies of this city, and "in union there is strength." From the sentiments I have heard to-night harmony has been urged. It is still important that we should keep it before us just as these five dental societies have exhibited the true spirit in which we must work and through which we must accomplish that which we desire. The good feeling in this gathering will help us to cultivate and propagate the same spirit in the forthcoming Congress. The advice is given to us by the same divine authority that has been quoted this evening, "Love thy neighbor as thyself." An exemplification of this principle in the forthcoming Congress will enable us to secure the harmony which is desired in this great affair. If we can just have that principle of brotherly love—love our neighbors as ourselves ; if we can have forbearance and a kindly consideration one for the other as

professional brethren should have, the Congress will undoubtedly prove a success. It has been said, that to him who works in a self-sacrificing way, the highest and greatest blessing comes. If we can cultivate a spirit of brotherly love and make harmony a necessity in the case and cultivate it more and more upon the same ground manifested and started here to-night, it will result in materially developing the great work which we are mapping out for 1893. So far as these five societies are concerned, they have afforded us an opportunity for the cultivation of this spirit of brotherly love among the profession which we all admire.

I have heard that there are from 500 to 600 dentists in this city. I have heard also that only about 150 are active members of the city societies. That proportion exists in most of our States and cities. There is something wrong just here. If we are in earnest and exhibit the same spirit which we preach regarding the welfare of the profession, professing a love for dentistry, an expression of that love is needed. A sentiment which does not find expression may not do much good. I believe, from my own observation in dental societies, that if we can get the younger men of the profession into the local, state, national and international associations, men who bear a good character and stand high in the profession, it will do more for the development of dentistry than we can do in any other way, and it will be an easy matter to make the great meeting of 1893 a success. If we endeavor to increase the membership of these societies and make them so useful that the younger members will wish to join and find them places of profit to themselves in many ways, it would do a good deal toward the development of our profession. If we want harmony and success not only for the great Dental Congress, but for the future, we must have that spirit which has characterized many of the older men in the profession—a spirit of self-sacrificing interest, a spirit of kindly feeling toward our neighbors—in short, “Love thy neighbor as thyself.” (Applause.)

DR. J. N. CROUSE, of Chicago. *Mr. Toastmaster and Gentlemen:*—If you think that you have seen all there is in Chicago, and all the dentists and what they can do, you are mistaken.

Speaking of the World's Columbian Dental Congress, I have known but little of the committee's work, owing to the fact that I have been busily engaged otherwise. But the query has run through my mind in this way: What in the d—— are those fel-

lows traveling around the country for, holding meetings, and not let us know what is going on? Why do they not assign all this work to the Chicago dentists? We would be prepared for it; we can accommodate the crowd here, pay the bills, and everybody would be happy. The dental profession of Chicago does not do anything in a small way. This is only a little sample of what you will get before you are through, and to the committee I would say, if you run short of anything, let us know what you want, and we are here and are ready to do all in our power to assist you. (Laughter and applause.) When we pull together we can compete with the world, and that time always comes when it is necessary. Gentlemen, I will detain you no longer.

DR. GEO. H. CUSHING, of Chicago. *Mr. Toastmaster.*—I suppose I have been called upon for the reason that you all know I cannot make a speech. What I shall say will be very short. I cannot tell you how much pleased I have been at what I have seen, heard and felt this evening. I can only reëcho the sentiments that have been spoken by those preceding me with regard to the evidences of the unity and earnestness of the profession concerning the coming Columbian Dental Congress. I have no question in my mind of its success, whether depending on Dr. Crouse's pledges or otherwise. I do not think there will be any necessity for Chicago to make up any deficit. There will be an abundance of money, and I know we shall all work in harmony in this city and throughout the country. I thank you, gentlemen, for calling upon me. (Applause.)

DR. INGERSOLL, of Iowa. *Mr. Toastmaster:*—I hardly know what to say. I feel more like singing than talking—"Hail Columbia, Happy Land" in every town and hamlet in this broad country until the echo of it has reached the very remotest corners of the globe, and the people as one mighty caravan on their way coming to Chicago, the center of America. (Applause.)

Every educational interest in this country will be represented at this great exposition, and it will mark the future of America's educational institutions; and dentistry has as much right to be represented as any other profession or country on the globe. (Applause.)

DR. SUDDUTH, of Minnesota: We have heard a good deal this evening about the five united dental societies of the city of Chicago, and I must say that it is a very pleasing spectacle to see this

unity manifested in our midst. But in reference to the matter of union, you must not leave out other societies. I want to speak in a line of thought not brought out by the preceding speakers, and that is, we can appreciate the interest that has been manifested by your five dental societies, but we want you to add the three dental societies to your number which we have in the State of Minnesota. (Applause). We want to pledge to this committee the hearty support of our State in any manner, shape or form that it can be tendered. We are with you since you have assisted us in capturing the Republican National Convention.

A compliment has been paid to your high buildings, one of which, I believe (the Masonic Temple), is twenty stories high. We have some high buildings in our town, but we have better foundations for our buildings than you have here. Above all, I want to say, we will render all the assistance that is possible to make the forthcoming Columbian Dental Congress the greatest and grandest convocation of dentists ever held in the history of the profession. (Applause).

Dr. Crawford, of Nashville, at this juncture extended an invitation to all those present to attend the next meeting of the Southern Dental Association, at Lookout Mountain.

DR. G. V. BLACK: I have been interested this evening in what you have been doing and saying, and I have been wondering what would be the more serious outcome of this Columbian Dental Congress. We have been offering plans and suggestions in a sense, and making arrangements for getting the members of the profession together. I suppose arrangements are also being made to interest us when we do get together. Now, as this is a matter not only to interest us, but is to attract the attention of the world, it should be made known to the world that this congress will be of benefit to the people and to our patients. There is where the great work is to be done, and the work that is done must be done by individual effort. We, as an assemblage, can always make the arrangements necessary in bringing a people together; we can also hear what individuals have to say, and it is what they may say that will live in the future. I hope that the Congress will do both our patients and ourselves good. If we rally around this Columbian Dental Congress for this purpose, then the proceedings will live in the future. If we rally as much as we please for any other purpose, then it will fail.

DR. SHEPARD: The Executive Committee have been and are working simply as trustees to bring out from the few studious minds in the dental profession throughout this and other countries the very matter which Dr. Black refers to. They are nothing but executive officers to call out the thoughts and researches to be presented here in 1893 as a monument of dental achievements up to the present time. The results will be valuable and will live, or otherwise, according as our wisdom shall have selected the proper men and shall have called together the proper material by which those thoughts, investigations and conclusions shall be formulated for the benefit of our present time and future ages. (Applause).

DR. NOBLE, of Washinton, D. C.: *Mr. Toastmaster and Gentlemen of the Five United Dental Societies of Chicago*: My thoughts, while listening to the speeches that have been made around me, have referred back to those men who labored first to establish dental schools and societies. Many of the older men have passed away. I remember their faces well. How pleased they would be if they could look upon such an intelligent assemblage of gentlemen as we have here to-night. I have seen the time when such a representation of the dental profession could not be gathered together even in this great city of Chicago; when they labored under difficulties that we do not labor under to-day; when they labored to organize dental societies and colleges. I remember well the labor of some of those men. I have the honor to have upon my diploma names that, I think, you will recognize—Chapin A. Harris, Edward Maynard, Thomas Bond, Phillip H. Austin, and the men connected with that college. How pleased they would be if they knew that we were going to have such a dental congress as we propose to hold here in 1893. I think it would do their souls good. I wish to say to the younger men, that they hardly realize the difficulties under which those men labored at that time and what an inheritance they have left us.

Personally, I desire to thank the gentlemen of Chicago for the cordial and pleasant entertainment that they have extended to us and it has given me great pleasure to be here to-night. I have met many of the members here individually from time to time at our dental conventions, but this is the first time I have ever had the opportunity to see so many of the Chicago men and make their acquaintance, and I assure you all, gentlemen, that it has given me unalloyed pleasure to be with you.

The objects of the Executive Committee and their labors have been fully discussed. They have alluded privately to coming to Washington to get an appropriation. If they are not more successful with the present congress of getting an appropriation than I have been in getting through a dental law for the District of Columbia, then I shall feel sorry for them. I have labored for eight years in that direction. I have not accomplished it yet. It looks more favorable now than ever before, and I hope before the expiration of the present congress that we will have a dental law in the District of Columbia, which, I am sorry to say, we have not to-day; because we are not a voting population; therefore we command no influence. An influence is being brought to bear upon the matter at present from the outside, and I think it is getting into shape. We shall have no difficulty with the Senators, and I think not with the House of Representatives.

Gentlemen, again I thank you one and all for the pleasant time I have had in Chicago. It makes us feel that we shall have a great Congress in 1893. (Applause.)

DR. LAURANCE, of Lincoln, Ill. *Mr. Toastmaster and Gentlemen of the Profession of Chicago*:—It is not a pleasure to be called on for a speech at this late hour. As a member of the profession, I congratulate the profession of Chicago upon their harmony and upon the duties they have performed in this great work; and we should be thankful for the presence of these distinguished gentlemen from abroad who have come to us and outlined the labors that they propose to perform for the benefit of our World's Columbian Dental Congress. That it will be a success, there is no question. I know that the profession in Illinois will stand together, and that the work to be done here, as Dr. Crouse has designated, will be a success. Chicago never undertakes a thing unless she makes a success of it. (Applause.)

As a representative of our examining board, whose work it is to deal with irregular fellows that climb over the wall; standing before you rather in the light of an officer of the law to protect the community from criminal ignorance and stupidity, whose labor it is to advance and elevate the profession, I take this opportunity to say to my fellow practitioners in the State of Illinois, that as the representative of my colleagues on this board, we shall extend a welcome to our *confreres* from the sister States. Illinois leads in almost everything except a dental law. We must work to uphold

our noble State, to try and have a dental law passed, and not be the dumping ground for all of the quacks that you think of. (Great applause.)

DR. T. W. BROPHY, of Chicago, extended (in behalf of the President of the American Dental Association, whose innate modesty forbade him to do so) an invitation to all those present to meet with the said Association at Niagara Falls, the first Tuesday in August, 1892.

At the termination of the speech-making, Dr. A. E. Baldwin, of Chicago, offered the following resolutions:

Whereas, The death of the son of Dr. J. A. Swasey, one of our active members, has prevented him from being with us to-night,

Resolved, That we, the members of the Five United Dental Societies of Chicago, sincerely condole with him and his family in the loss he has sustained; be it further

Resolved, That this resolution of our sympathy and sorrow be forwarded to him through Mr. Whitford, the stenographer of this meeting.

The resolution was seconded by Dr. H. J. McKellops, of St. Louis, and unanimously carried.

Toastmaster Stevens requested every one to rise and participate in singing Auld Lang Syne, after which the company quietly dispersed.

CHICAGO DENTAL SOCIETY.

Regular meeting, January 5, 1892, Dr. D. M. Cattell, President, in the Chair.

Dr. R. B. Tuller read a paper entitled, "Post-Graduate Study."

DR. J. W. WASSALL, in opening the discussion, said: Mr. President, I think we ought to be congratulated upon having listened to such a good paper and to one that touched upon points always of such great interest. I am not at all inclined to be critical of anything that has been said, although perhaps one might find fault with the title. The principal part of the paper was devoted to the question of instructing or elevating the great class of nongraduates, therefore we could hardly call it "post-graduate study."

The first part of the paper, however, dealt with the question of post-graduate study properly speaking, stating that the men that were turned out from our dental colleges were usually incompetent. That is of course a fact; but the experience and study which

comes with the first year of practice finally make good dentists of them ; they can do no better than to follow the injunction on the front page of the *Cosmos*—"Compare, Reflect, Record." They must "compare" different authorities with what they have learned at college. For instance, suppose he may have to treat an alveolar abscess the first thing in his practice ; it is then his business to hunt up all the different authorities to find out the best methods of treatment pursued by the best men wherever the best men happen to be. He must "compare" all that with what he has learned at college, which was only the method of one professor, perhaps, and "reflect" upon it ; he will then arrive at conclusions which will be of lasting benefit to himself, and if he "records" it, of benefit to others.

If I were asked to name the two most useful ways of obtaining post-graduate knowledge, I should say society meetings and their published transactions as they appear in the monthly journals.

I do not think as much benefit is derived from attending a dental society meeting, which convenes for a night, after a hard day's work when the practitioner feels tired, as by attending a society which meets for four days in a week, where he can go away from business cares and associate with brother dentists. He then has an opportunity to meet them socially and discuss cases. These times to me have been the greatest teachers I have had, and I look upon them as the best opportunities for post-graduate study, as well as for the enlightenment of nongraduates.

The reading of transactions of other societies I consider the best reading we can get in the way of dental literature. These transactions represent the progress and methods of the best men we have in the country and are the things we can always get benefit from. A man must ever bear in mind that he can only advance by his own personal application and work.

The Chautauqua system seems, as the essayist has outlined it, a very seductive one. I think the matter should be put to a test by the Chautauqua organization already existing. I think if they were approached in a proper way by Dr. Tuller himself, or perhaps by a committee, that we could find out what they can do. It could then be laid before dentists and a dental course arranged, and it is possible that a good deal could be done if a general interest were taken in it by dental societies and dental journals. I have not thought enough of this phase of the question, however, to have

any opinion about it. I am in favor of anything that will make men study more and go to dental society meetings. It will make better dentists of them and they will become more enlightened and more worthy to be called professional men.

DR. J. G. REID. One thought suggested itself to me in the paper which was not elucidated by Dr. Wassall or the essayist, and that is, if such a course were adopted it would undoubtedly stimulate a great many men to support a system of study such as has been outlined, because it places them under an obligation. When students leave college they lose to a certain degree their interest. When they are attending college they are working for something. They have something in view. If dentists should have an organization of this kind or wish to take up a system of study covering the period suggested— one, two or three years—it places them in a position where they would feel obliged to pursue their studies, because they have something to gain. It is like a man being in debt; if he is an honest man he wants to get out of debt. He works with that end in view. If we engage in a course of study, we have something to work for, and we put ourselves in a position where it is virtually an obligation. It seems to me that the idea is a good one.

DR. LOUIS OTTOFFY: I have had a number of interviews with the essayist, on this subject, during the last two years; there has been much talk and many papers have been read on the subject of post-graduate study. It is time for some one to lead and act in this matter. A number of plans have been suggested; some are comparatively simple, yet not even the association of which the essayist is president is ready to undertake to put any of them into operation.

The Chautauqua course was at its inception not what it is now. It was evolved from a comparatively simple beginning. The first dentists to commence with are those who are not graduates, those who have never attended any dental college, either as beginners or as practitioners. While the association of which Dr. Tuller is president is really called a Post-Graduate Association, it is within its scope to make of these men, graduates; that is, it could interest them to the extent that they would eventually either become graduates of a dental college after taking the regular course, or, at least, would attend a practitioners' course. I suggested to him that it would be a simple thing to begin with those whose applications he now has; select and give them a certain book to commence a course

of reading. Let them go on with the reading of one book at the present time, and then as the membership of the association increases other books can be added, or text books can be written by men who are competent to do such work. We will gradually learn what the profession needs; and from this small beginning there could be evolved a system of suitable reading courses that will eventually embrace all dentists, whether graduates or not.

In my report before the American Dental Association last year, I referred to the contemplated work of the Post-Graduate Dental Association, and as a result I received several letters which I have turned over to the President. These men wanted to know what was being done. I have no doubt, if it is suggested to them, that a certain number of pages of a selected dental work should be read each week, and that they would be expected to pass an examination, the reading course, to a limited extent, would now be an established fact. I would suggest that Dr. Tuller begin in this way, then the system could be elaborated and improved until it becomes perfect.

DR. C. F. HARTT: We have with us to-night a man who has not only talked on the subject of elevating the dental profession, but one who in connection with a prominent medical college commenced this work in a small way long ago. I remember a good many years ago he said to me, "I do not think you know as much as you want to know." That was probably the case then and even now. He was the means of giving me an entire year in Rush Medical College, attending lectures, clinics, etc., which greatly benefited me. He was the means of sending other gentlemen there—men who are to-day ornaments to the profession. After that, he enlarged his system. He started a post-graduate or practitioners' course at the Chicago College of Dental Surgery. I am not now connected with that college, yet I want to say that Dr. Brophy deserves credit for starting and maintaining that course of study. It is quite possible the term may be short; a month is not a great while. It is a new thing, and doubtless a three months' course can be established. If a man saves up his money, leaves his practice for three months, and goes to the Chicago College of Dental Surgery or any other college, it will do him more good than three or even ten years' study at home.

DR. J. W. WASSALL: I think the point brought out by Dr. Hartt ought to be made more prominent in the essayist's paper.

The post-graduate or practitioners' course we have in our dental colleges is an excellent thing and is something I should have spoken of in my previous remarks. I think that going to a dental society for a week is simply a small post-graduate course. It answers the same purpose, although the time is shorter. It is a highly creditable thing to the colleges to have established the post-graduate course.

DR. J. H. WOOLLEY:—I am in full sympathy and accord with the paper that was read to-night. I always think that we should further any movement that will teach us the way out of ruts. Possibly we may get into a rut in dentistry. Any movement that is for the general diffusion of knowledge is very slow at first. Let us take, for instance the movement that started university extension. It was away back in 1850, I think, that one man started a course of lectures and had 500 laboring men under his instruction. He was interested in his fellow creatures. Coming down to a later date another course of lectures was started. Hundreds attended these lectures. University extension in England took that line of thought, which resulted in 350,000 people attending the lectures through England. Now, it seems to me, the best way to start a movement like this would be in a small way. Get the dentists in Chicago interested and a lecture course might be commenced in a simple and modest way and its influence be felt; lectures, if you please, on scientific subjects seemingly outside of dentistry, yet having a practical bearing on it. I think we as dentists sometimes are narrowed down to one special line of thought; that if we go out into other fields and embrace other opportunities in a literary way, we would not only be benefited in that direction, but it would enrich our whole dental lives. It would not only enrich what we have to say to one another in our discussions here, but our papers would show that there is much beyond and much to stimulate us to get to the beyond. I think that if we have any ambition at all to be anything, we can avail ourselves of whatever opportunities may present themselves to us, and if we cannot get at the matter in a larger way, why not take up some subject of a scientific nature connected with dentistry whatever it may be. Let us take hold of it in a small way, not only in this society but asking other societies in Chicago to join us.

DR. EDMUND NOYES: I remember that seventeen or eighteen years ago in this city a dozen or fifteen men arranged two winters

for series of evening lectures upon chemistry, physiology, histology and pathology, especially the pathology of inflammation, and some of the men did a great deal of reading along with it. Others took very little interest in the course and it was somewhat difficult to get together a class large enough to support the undertaking ; but as I look back upon it and think it over it seems to me to have been one of the most fruitful things in good results that I can remember. A very considerable number of the men who were in those classes afterward took a full course in a medical college and graduated. I cannot say that the impulse to do so was derived from those winter studies. It possibly may have lain back of that, but it was promoted and perhaps brought to a conclusion by them. Every effort of every kind to promote interest in professional study on the part of practitioners should meet with the heartiest encouragement, the most abundant help we can possibly give it, and such study will always be fruitful of good to the men who undertake it and to the profession.

The movement that is under consideration this evening seems to me to be waiting for a man who has the experience, the judgment and enthusiasm and can possibly devote the necessary time to it. It wants a man, besides having first-class ability, who can afford to give such time and effort and money as may be necessary to establish a movement of this kind, such as some of the presidents of our educational institutions have given to them ; in other words, it is a life-work for some man. If such a man is found and he is a young man and will spend his whole life at it, he can probably develop it into something valuable. I do not know enough about the circumstances of the case to know whether the suggestion made to put such work under the general charge of the Chautauqua Association would be a practical one. It would seem to me that great assistance could be had in that way in the arrangement and management of the machinery of the course. It would have to have competent dental men in the particular leadership of that department. The very best men will pursue graduate study without any such assistance. One man, whom I know well, said to me that for fifteen or twenty years it was his invariable habit to spend the hour from eight till nine every morning in either study or experimental operations aside from any professional labors. I am certain that man's life has been one of the most fruitful I know anything about in any profession. (I think one hour in the morn-

ing did not comprehend all the work he did in the way of study during that time.) If a systematic course which is practicable to a large number of men can be arranged, and a sufficient number can be induced to begin it, the community of thought and the stimulus of associated effort and interest will keep a great many men at work long enough to accomplish something valuable, who would soon tire of it if left entirely to themselves.

DR. J. N. CROUSE:—This is rather an unsatisfactory subject to me; not that I have not thought of it seriously many a time, but because it is a subject that I have not yet mastered. I have not been able to mature a plan that was satisfactory to my own mind. After devising a plan I could see too many flaws in it. To-night I am just in that position. I have no satisfactory plan to offer.

The dental profession so far as education is concerned, are educated principally in three ways. First partially, in individual study and in connection with a dental college. Second, in connection with societies. Third, in associating one with another. The last is one of the most prolific means of culture and of advancement for the dental profession. It has been so with me at least. The men in the profession with whom I have associated at one time and another, have visited me; we have discussed subjects quietly together, and it has been prolific of as much benefit to me as any other one thing. Lately I have been so occupied with one thing that it has almost been master of me at times, and I have not had time to be even sociable; but this is a feature of education that ought to be more cultivated.

There are many practitioners in this city who have lately met together, had dinner together—and that does not necessarily mean drinking wine and making gluttons of themselves—and discussed subjects in connection with dental practice. I believe if there were more of that spirit cultivated, it would lead to more good than the establishment of the dental colleges we have in this city. It becomes a question when you establish rival institutions and men work themselves into a spirit of animosity toward each other, as has been experienced in this city, whether our dental colleges have not done more harm than good to the profession of Chicago. A good lawyer will not bring two dentists together in a court room to testify on the same subject at the same time. If one listens to the other giving testimony, just as sure as one is up the other knocks him down. I do not know why. I do not know that den-

tists are more pugnacious or jealous than any other class of professional men, but it would seem that they are sometimes. I have tried to study out why it is, and I have not come to any satisfactory conclusion. Patent attorneys have told me that just as sure as they have two dentists together giving testimony or discussing a principle, one would be sure to oppose the views advanced by the other every time. It is a serious matter ; it is a matter that puzzles me to find out, why men in the same profession, men whom we might call the leaders of our profession, cannot get together and discuss subjects without sawing each other to pieces, because they are not connected with the same institutions. The dental profession here will advance when the dentists of Chicago pull together to a man as the citizens of this city stand together. Is it so now ?

I was informed a little while ago that the banquet we are to have has been almost broken up by college factions. I said, let us shut them all out, not have a college man in it, and we will have a good time. (Laughter.) It would be a good thing to place them in a position so that they would be ignored. I consider it a disgrace to the profession that such strife should arise from time to time about comparatively nothing. I like controversy, but I do not like fights where one man stabs another in the back. I can go into a controversy that is hot as well as anybody and finish it right there. If I thought there was any possibility of the colleges stopping this strife, I would like to get the whole crowd together, lock them in a room and have them fight it out to a finish, and then start a post-graduate course. (Laughter.) They could then get together and establish on peaceable terms a post-graduate course which would be an honor to this or any other city. There are hundreds of men in the country who are desirous to attend post-graduate courses and get benefits from them. All colleges should have sincerity and brotherly love enough to be interested in this work and organize such courses. They are the ones that should do it.

DR. C. F. HARTT: Dr. Woolley says something about bright ideas. I think I have a bright idea, something that we can all act on, and that is, before we talk of reaching quack dentists let us reach the members of our own society. Where are the members of this society to-night ? We are in session at this moment, and yet we have not the attendance we ought to have considering our member-

ship. If every man here to-night will try and bring four dentists of his acquaintance to the next meeting, I will do the same. Before we talk of reaching outsiders we want to reach our own members. Why are they not here? In addition to this I might ask a very pertinent question: how many of the members of this society and other societies in this City and State, take two first class dental journals, and read them carefully from cover to cover? This will give them a course of reading for the year far superior to anything found in the text books. I am sorry to say that I have heard it stated in dental meetings that the journals of to-day are not worth reading. I have given the authors of such statements careful scrutiny, and I have come to the conclusion that these men as a rule do not read the journals, and if they do their industry seldom takes them farther than the finding of their own names and the reading of their own articles; such statements are productive of great harm to the profession at large, for the drones in the dental beehive are only too willing to take up the refrain and make it an excuse for their negligence in these matters.

DR. ALLPORT: While listening to the paper, it occurred to me that if I could be put back twenty years in my life, I would not only make better use of my time in study, but also be of more use to others than I have been.

The idea of a post-graduate course of study is a good one, but it seems to me that in the paper as well as in the discussion the idea has been confounded with other systems and courses of instruction all good in their way, but distinct in their systems as well as in their purposes.

A post-graduate course of instruction is one thing, a Chatauqua course is another; a practitioner's course another, and a dental college course still another and quite a different thing. A post-graduate's course presupposes that those who attend it are graduates; that they have passed through the ordinary dental college instruction, and that they are so well informed that they can comprehend and be benefited by an advanced practicable, as well as a scientific course of instruction. This course would be of little benefit to the ordinary nongraduate practitioner for the simple fact that his previous education and training would not enable him to comprehend the scientific teaching in such an advanced course. On the other hand, a course of instruction that would be adapted to the needs of the ordinary nongraduate practitioner would be al-

most useless to the graduate. It would be threshing over old straw, and nearly a waste of time. Those who might attend the course would not intend to graduate, nor do they desire much scientific instruction. They would simply want a helping hand in practical work, chiefly in manipulations and new ways of doing things. While the regular college course embraces the elementary and advanced, both in science and practice, leading the untutored both in hand and in mind, step by step until prepared to enter upon practice on his own account.

A course of instruction that would cover all this has been suggested here this evening, and would include the regular dental college course, the Chautauqua Course, the post-graduate and a practitioner's course as well, would demand an institution with a corps of teachers and appointments far too large to contemplate, or else the teaching would be confusing and of little practicable benefit to those who might attend.

The course of instruction established in the Chicago College of Dental Surgery a few years ago, and spoken of here as a post-graduate course was not a post-graduate course at all. It was simply a nongraduate practitioner's course, consisting chiefly of instruction as how best to do things, all good and practicable in its way, but it was in no sense a post-graduate course.

A Chautauqua system consists of a course of reading adapted to the existing stage of mental development of each student, no matter what this may be. To apply this idea, and make it most useful to dentists who stand in the greatest need of its instruction, a department for practical work would have to be included in the course. This would be a usurpation of the functions of the existing dental colleges.

The spirit of the paper is most commendable, but it does seem to me that in it, as well as in the discussions, too much ground has been covered, and that the means to an end have been too indefinitely stated. As a rule, it is not well to include too much where a certain object is to be accomplished, and the means of accomplishing it should be made as simple and direct as possible.

As I understand it, the main thought in the paper is not the instruction of graduates, but the better education of a large class of nongraduates, who, for various reasons have no intention of taking the regular college course. The thought is worthy of careful consideration and if anything is done about it, let the course be adapt-

ed to the comprehension as well as the needs of such students. A Chautauqua course of reading, or a post-graduate course would meet the needs of certain classes of students, but as I have said before, they should be for different purposes and under different management.

The practicability of issuing a diploma, as has been suggested, by such an institution as has been discussed here this evening, it seems to me would be exceedingly questionable, for I really do not see how it would be possible for one diploma to cover all the degrees of qualifications referred to, unless it was to usurp the function of the regular dental college diploma.

A certificate of attendance would be all that it would be proper to issue.

DR. CROUSE : I have tried to have at every meeting of this society some practical subject discussed not in the paper. I believe it ought to be done. Men attend these meetings to learn something, to be entertained or to entertain others. There are many times when the papers read here fail to bring out anything of a practical nature. We should discuss things that interest us from day to day. That is what the society ought to do.

DR. A. W. HARLAN : I am interested in the discussion, and I rather like the way Dr. Allport approached the question of making divisions. I think there is room for a practitioner's course in connection with every dental college in the country. I think also that there is room for a reading course. That is what I want to call it; that those who cannot attend a practitioner's course, who will not attend dental societies, should have some evidence that they have pursued a three years' course of reading. My own definition of a post-graduate course would be one where a man, who had already graduated, could go and perfect himself in some special line in which he was interested. For instance, if I desired to take a post-graduate course in chemistry, I would go to an institution that was open the whole year where I could get the instruction required at any time. They would not confer a degree or anything like that; it would be a voluntary effort or action on my part and would result in my gaining the required information if I stayed long enough and studied hard enough for it. There is no reason why a dental college could not offer a strictly post-graduate course to the most advanced practitioner, because in the daily routine of practice our most eminent practitioners have little time for study, and if there

were competent teachers they could have everything so systematized that every one could get benefit if they absented themselves from their offices or homes for a month or so.

The object of the post-graduate medical schools in this country is to give instruction in various branches. The post-graduate medical school on the South side in this city gives instruction in operative surgery upon any region of the body—the eye, ear, genito-urinary, etc.

If the pupil wants to study diseases of the nervous system, he has a specialist there who devotes his whole time to that and nothing else. He can get instruction daily, and most of the practitioner's courses connected with medical and dental colleges are based on the same plan practically that the regular student has presented to him; that is, the instruction is more or less irregular. He attends a lecture on surgery on Tuesday, say, and then attends one on chemistry or some other branch on Friday, the particular branch that he is interested in. He could not go there and spend his whole time on one subject. The difficulty in the way is a financial one. If I were employed as a teacher in a post-graduate school I should want a good salary for my whole time. It is the only way we can give advanced instruction by having somebody there all the time.

I have visited the post-graduate institutions in Europe several times. I have been through the laboratories at Oxford and other colleges. Last August I went to Cambridge and spent some time in the bacteriological laboratory. I could go there at eight o'clock in the morning and stay as long as I wanted to in the presence of one or more professors all the time. That is what is really meant by post-graduate teaching.

It is not an impossible thing for this society to lay out a reading course for dentists irrespective of their qualifications or diploma. I have no doubt a committee of three could be appointed to select three works on three subjects, to lay out say fifteen pages per week on each of the subjects, making forty-five pages to be covered weekly.

Dr. Noyes spoke of the course of lectures which was established in 1874, and of those who attended the lectures. The subjects taught were chemistry, histology, pathology and physiology. They were of great benefit to all. Some of the men who attended

these lectures were graduates and others were not. Some were M. Ds., others D. D. Ss.

If this society has any desire to start a movement for a reading course for dentists, I would be most happy to second any motion of that kind. It is impossible for this society to establish a post-graduate course of teaching. There is not enough coherence in it. It has to have finance, laboratories, etc., and the society could not undertake to sustain anything of that sort.

DR. T. W. BROPHY:—I am very much like my friend, Dr. Crouse, on the subject of practical papers brought before the Society. While I believe that papers of a practical nature are generally the most appreciated, I do think that the paper this evening has brought out a more animated discussion than any I have heard presented to the Society for some time. The discussion has been entered into with an earnestness that we rarely see. I desire to thank Dr. Tuller for the interest that he has manifested in what he calls post-graduate study and for the paper he has read this evening. It has put us to thinking. It has elicited a discussion that must necessarily benefit the profession at large. It is the kind of discussion that the Society should have engaged in years ago. It has pointed out the way by which two-thirds of the members of our profession may acquire the knowledge they desire.

The essayist has said that two-thirds of the dentists engaged in practice in the United States have not had college opportunities for acquiring dental knowledge or acquiring a dental education. That is equivalent to saying that twelve thousand dentists in our country are not graduates. If twelve thousand dentists can be improved by a course of study that may be outlined, the benefits will accrue to forty million people. What shall be done for these men? That is the question. I regard it as the most important question before the dental profession to-day. What can these men do to develop themselves, or rather to improve themselves, and thereby benefit their patients? The doors of our dental colleges to-day are practically closed against them. Three long years are required and a large expenditure of money to pass the prescribed college course of study to-day. Is it possible for these men to lay aside their practice for three winter sessions and spend the necessary funds to acquire that knowledge which the dental institutions of the United States have required as necessary in order that they

shall receive a degree? Every man who has spoken on the subject with reference to the financial phase has said that it is difficult to leave one's practice for a brief period of time. How can they leave then for eighteen months? It is absolutely impossible, gentlemen. They cannot do it. The profession must therefore make a way by which these men can acquire the knowledge that they desire and that they need for their own benefit and the benefit of their patients. The younger men coming up may qualify themselves and may enter the profession with all of the accomplishments that our institutions of learning can afford.

I do not agree with the gentleman who has said that the dental colleges do not qualify men to practice dentistry. I will make the assertion, and challenge its successful contradiction, that the graduates of our reputable dental colleges are as well qualified to enter upon the duties of their profession as the graduates of any other professional educational institutions in our country.

I wish to make a statement. My position has been such that I have from year to year received letters from dentists in various sections of our country asking me to send them assistants from those who have graduated, and six weeks after commencement day I have not been able to find young men to fill these vacancies. The demand has always been greater than the supply. Those who are in a position to know where they can get the best talent for assistants in offices, seek the colleges for them. Point out to me a single young man in this city, the graduate of a reputable college, who is not making a respectable living. So much for the colleges. I speak earnestly on this subject. The subject of colleges and the work they are doing has not been treated fairly by certain members of the profession.

The colleges are done an injustice in this matter. It is the same old story that has been carried down from the days of Wildman. Our dental institutions have been underestimated; the colleges, however, have been going on, rapidly advancing until they are the only professional schools in the United States that have an organized body, working to advance the interests of their students. What can you say of law and medicine? Have they such an organization?

Dr. Crouse paid the Chicago College a high compliment when he said the practitioner was started right; but he was in error when he said the course was hurried too much. Failure in the ar-

rangement of details at the college was discovered at the last moment, which subjected the management to humiliation at a time when better things were expected. When men fail it is not the fault of an institution. The course went on and by unanimous vote of the class at the close was pronounced a great success.

Some of the arguments that have been advanced this evening are quite theoretical, although based upon honest convictions, no doubt. The question is, What do these nongraduate two-thirds of the profession desire? What do they most stand in need of? A large correspondence and a practical experience of three practitioner's courses convince me that the desire on the part of the great majority of the profession who seek what we call post-graduate study or a practitioner's course, is to acquire a knowledge of those things of a practical nature. I know Dr. Crouse is a practical man, and if he should take a practitioner's course I know it would be for the purpose of acquiring practical knowledge. I mention Dr. Crouse on account of my long association with him, knowing that it will not cause any ill feeling. There are men who desire a more extended knowledge of the fine manipulations necessary in the construction of regulating appliances. Where can they get it? Who can they go to? They cannot go to a practitioner, because he is too busy attending to his own affairs; and how much information can they get from an ordinary wood cut and the descriptions they read of it? Very little. They need some one to teach them how to work. That is what a post-graduate course does. The majority of the men who desire post-graduate study are those who desire to learn special things.

When a post-graduate course was established here a full scientific course was laid out, so that men who desired to study the relationship of the eye and ear to the teeth could do so; and those who desired to acquire a knowledge of diseases of the nervous system could do so, as well as the relations of the teeth to other parts. More than thirty attended the first course. They took an interest in the more practical subjects. Most of them wanted to know how to make crowns and bridges. A course was laid out also in the diseases incident to dentition, and one of the most competent teachers in this city, a man having an experience of thirty years, undertook to deliver a course of lectures on that subject. He did not have an audience. The same was true of diseases of the skin and other parts of the body that are so frequently associated with

dental lesions. They took very little interest in these subjects. I do not blame the students at all. They wanted to know how to swage gold plates, to make regulating appliances, to learn the modern methods of filling teeth, the manipulation of gold and amalgam fillings—things which they had to do when they got home. They had not had the time to take up physiology, pathology and surgical anatomy.

Gentlemen, if you have a reading course it must be started as Drs. Allport and Harlan have said; but it is not a post-graduate course for the reasons stated. There was not a graduate in our first practitioner's course and there were more than thirty students in attendance. In the next course there was one graduate; in the third, six, and in the next course there will doubtless be a dozen graduates.

Students who graduated from our college years ago are coming back to "Brush up," so to speak, in certain departments in which they feel themselves deficient. I think the majority of practitioners do not know exactly how the work is carried on in our schools. If you can get men to say that they do not know how to do a certain thing, and are honest about it, then they are in a position to learn something. If they admit that they do not know how to make a gold crown, then we can show them how to do it. In our first course we were experimenting somewhat. We began to instruct students by demonstrations, and when they went home they could not do the work. They had the theory, not the practice. Now, these men are put to work and they are taught to do things right, and when they go home they feel that their time has been well spent. Some are returning to acquire further knowledge in the profession. That is the proper way to elevate the profession from a practical standpoint. There is not a man living who will see the rank and file of the profession get down to scientific study. Let a scientific course of lectures be delivered in this city, and I venture to say you wouldn't have fifty out of 500 dentists present. I do not say this to cast a reflection upon dentists; they are busy men, and have other things to attend to. They want something more practical. If we can get graduates and nongraduates to familiarize themselves with practical things, that will enable them to fill the teeth of their patients better, to treat pulpless teeth better, to cure pericementitis and alveolar abscesses, to make artificial dentures so that patients can wear them comfortably, to instruct parents as to the care of

children's teeth, and to make crowns and bridges and do it well, in my opinion we have accomplished the greatest work it will be possible for us to do. We should encourage them to undertake dental and medical courses, to read text-books and other literature that may be placed in their hands. If we succeed in doing this we will have accomplished a great work.

DR. E. M. S. FERNANDEZ: I agree with Dr. Brophy's ideas in the matter of a practical course of instruction, and I commend post-graduate study, but by no means give a diploma. Our profession changes too much for that. Supposing we had had a post-graduate school about twenty years ago and we looked for those gentlemen to-day who had graduated, we would find them not up to the standard of dentistry to-day as it is taught and practiced. If dentistry would stand still, they would be all right, but it advances too rapidly. A practitioner's course I approve of very much. I would approve of a course of lectures of a certain kind, not old style ideas, but condensed, intelligent lectures intended for men that have been practicing their profession for some time and desire to improve in each specialty. Let it be so that a man can attend any course of lectures, on one specialty alone if he wants to, or some other practical subject. Of course, if any of us want to take a special lecture course we can go to a medical college and take anatomy, physiology, therapeutics, materia medica, or any other branch, provided we can do that. Still in a special course devoted more to dentistry we would get a more condensed knowledge.

In this connection I would like to say a few words in regard to our dental colleges. I have heard so many slurs cast on dental colleges that I know perfectly well the gentlemen do not really mean what they say. So far as I am personally concerned, I can say that the colleges I know of in this city are doing good work; that the teachers are doing their duty, and they do it well. If the students do not learn it is their own fault, and if they do not learn in these institutions, they won't learn anywhere. The colleges give their students good lectures and practical work.

DR. J. W. WASSALL:—I do not think any one has belittled the dental colleges this evening. I am sure I have not. The efforts they put forth are good and they have afforded the greatest benefit to those who have had the chance to go to them. The only point that has been made is, that the graduates from dental colleges are

not thoroughly prepared to do their work only because that is an impossible thing in any professional school and hence no discredit.

Dr. Brophy challenged any man to prove that the graduates of our dental colleges, or the institution with which he is connected, are any more unfit to practice their profession than the graduates of other colleges in other professions. That is true. A man may be a graduate of a medical college, no matter how good the college and how thoroughly he has done his work, still he is not yet ready to cope successfully with disease. It is only after he has had experience in practice that he is able to do that. The same is true of the legal profession. Only a day or two ago at a ministers' meeting the Garrett Biblical Institute was criticized because the products of that institution were not competent men to properly preach the gospel. They were charged with not having the divine unction. These men will make good preachers, the graduates of medical schools will make good doctors, the graduates of law colleges will be good lawyers, and the graduates of dental colleges will make good dentists, when they have had a little more experience in actual professional work.

DR. BROPHY:—May I add a statement to what I have already said? About five years ago, at considerable expense and labor a laboratory was fitted up in connection with our college for the pursuit of bacteriological study. The laboratory was elegant; it was thoroughly equipped. Some of the gentlemen here this evening were very enthusiastic about it and my recollection is that they did not convene a single night to pursue their work. If they did, I never heard of it.

DR. J. G. REID:—What Dr. Brophy has said is true. There were about ten young men who took money out of their pockets to fit up a bacteriological laboratory that would be an honor to anybody and an ornament to any practitioner's office. There was nothing done to my knowledge. After the laboratory was nicely fitted up the students lost their enthusiasm.

DR. R. B. TULLER, in closing the discussion, said: In writing my paper I elaborated the subject a good deal more than I have produced this evening.

I thought it would not create as much interest as it has; I therefore condensed it, and in so doing omitted some portions I should have allowed to remain in order to have been more explicit.

Drs. Wassall and Crouse say that while the title of my paper is

post-graduate study I have gone outside and devoted a large portion of it to the consideration of nongraduates.

My reason for that is given in saying that we must consider the situation as we find it, and we find we are largely made up of nongraduates—more than two to one.

I thought as this large element was made up of recognized dentists legitimately in practice, we must to a certain extent look upon them as graduates. Not graduates of some dental school, to be sure, but, having gotten their dental knowledge, their school days are over and they are settled in practice, as many of them have been for years.

If experience teaches much of the greatest value, such men cannot be classed with beginners. Several years in the mill ought to count for something.

Our work differs from that of other professions in the absolute necessity of a great deal of mechanical ability. We have to educate our hands to that degree of manipulative skill whereby we may do the most delicate and precise work under the most trying disadvantages.

A man who can not read or write may acquire a large degree of manipulative skill in both operative and prothetic dentistry, but he can not in this day and age be a competent dentist. On the other hand, a man with the highest educational attainments may read all that was ever printed on dentistry and yet not be any kind of a dentist.

It is not right, however, to ignore what a man has attained since he *has* attained it, and we find him in the actual prosecution of the work and perhaps satisfying the demands of his patrons.

A self-educated man may not be as good a dentist as he who has gone through the regulation course; and again he may be better than many who are college trained. Although self-educated, self-made, he may in every way be worthy of our right hand of fellowship. That does not argue that his way was the right way.

The die is cast that makes this condition of things in our profession and we cannot change it. These men are a part of the profession as much as we are, and were we disposed to debar them from practice (which none of us are I am sure) we could not do it. But we can do something toward bettering the condition in the future, by extending to them every opportunity and offering every stimulus we can to look up and come up to our standard. Then do

what we can to prevent any more from coming except through the regular course of training. But the minority you know, cannot always have its own way. We think—we *know* we are right, but we have to educate the minority to think so too.

Reference was made by some of the speakers to the great good that came of dental meetings, saying they were the very best educators. My paper accords full importance to the benefit of such frequent meetings, but I think a good many lose sight of the fact that the greater number of dentists are scattered throughout the country in such a way that they cannot often assemble. Many are unable to get out even once a year, very likely. This applies to graduates and nongraduates alike. If they were located in a large city like this where a good many may easily come together they would have the benefit of that contact.

We lose sight of the fact, too, that perhaps the nongraduates of our profession exert a good deal of influence when it comes to matters of legislation which we sometimes desire. We have desired for a number of years past to pass restrictive measures preventing the dental profession from being augmented by that class of men. Such measures cannot and do not aim to effect those already in.

I had an experience in New York State a number of years ago which illustrates the matter. I was not a graduate in dentistry then. I knew that measures were to be brought before the legislature there and the representative from our district was one of my patients. He came into my office one day and I extracted a tooth for him without pain and "payin'," and when he got out of the chair he said, "Doctor, if there is anything you want in Albany any time let me hear from you." He took the side of the measure which I advised.

These men distributed through the country exert a stronger influence in regard to legislative matters for dentistry than we can in cities.

My idea then is to extend a course of reading among the nongraduate dentists to bring them on a level, as nearly as possible under the circumstances, with graduates. Open a possible way for them, as I claim that under the present condition of things—three or five years in college—it is practically impossible for 99 in 100. Give them opportunities, and if they will not embrace them we cannot help that. We will get some of them. If we can by

such a course of reading bring them up to a standard of intelligence where they would be capable of prosecuting a course of post-graduate study. I would not hesitate to admit them and then open the way to the suggested post-graduate degree, if competent.

The idea again, and one I should have brought out in my paper was to educate these men on certain lines of studies with the view eventually of bringing them to our dental colleges for a short course at least, such for instance as the Practitioner's Course in the Chicago College of Dental Surgery, and which I think should be established in all the colleges in the country. They would be better able to comprehend the lectures and teachings, and such a course being a recognition from them, we would gain their harmonious action and connection with college work.

Education too, would bring them up to an appreciation of societies, society work and a good code of ethics; and in many other ways bring them into line with our work, and into touch with us, where now they are somewhat apart, forced into a position of antagonism.

Dr. Allport thinks the scheme is altogether too broad. I would defer much to the opinion of such a man and many others in this society. I am not positive, nor tied to any of the opinions I have expressed, but they come to me as a sort of conviction after carefully thinking and studying over the matter, and I shall endeavor to carry my convictions to others until I am convinced I am wrong. I want whatever is best for the profession at large and am open to argument. If we want to elevate the profession let us begin at the top and at the bottom and the middle and all along the line and lift it all along together if we can. The brilliancy of our best men, our leaders, will in no way be dimmed by such work. They would still shine at the head of a higher grade of men. If some way were provided by which our dental colleges could take the practitioners and put them through such a course of lectures and studies as they need to make them competent for the college diploma I should be in favor of it. But as I have said the present conditions practically shuts them out.

Not a college, nor any other organization can give a diploma for something that a person has not done under their teachings and guidance to merit and give proof that he merits it. A diploma is nothing more or less than a certificate of having prosecuted and passed certain studies and thereby understanding them.

The granting of a diploma at the end of such a course of home study, as has been suggested, would be an incentive to men in practice to study for it, the graduate having much the advantage of course, as his diploma from the college would be a certificate of having passed certain studies. I cannot see any inconsistency, as I look at it now in the establishment of a degree, which it might be possible for any man in the profession to attain or secure upon his showing evidence of having followed certain required studies and ability to pass a good examination on them. Once in practice such study must be pursued at home during leisure hours, and I believe it would help every man in the profession, from the highest to the lowest, to have such a course of study inaugurated, and every one of us should be interested in seeing it done. Leave out the non-graduate if you will, and leave out the diploma feature if you will, but I think a greater good would be accomplished if we open it up to the whole profession and give a stimulus by having something to work for.

I do not believe it is necessarily such an almost impossible undertaking as Dr. Noyes and some others seem to think. It does to be sure require a most competent man to manage and direct it, but we have men and ways and means when we determine that such and such things must be done. I mentioned the "Chautauqua Idea" because that society has demonstrated that such a thing can become a success. They have been in existence some fourteen years and have a membership of about 200,000. They have the whole country to draw from, while we have only the dental profession. They conduct their course for 50c a year. I do not know why such a scheme cannot be carried out in the dental profession under the auspices of some dental society for \$1.00 per year, an expense that is nominal, except the books each subscriber would be required to provide for himself, and the expense at the end for certificate or diploma. It must be conducted in a way to avoid large expenses. The work of teachers would no doubt have to be to a great extent a labor of love, but such work would need to be so distributed as to draw not too much on the time of any one without compensation. In fact, I do not think it would require more sacrifice on the part of such as might be called upon than they are making today in the interests of advancement of the profession.

Dr. Ottofy is correct I believe when he says, begin in a small way and let the thing develop, and no doubt if properly fostered

as we expect any infant to be, it will work out the way and the means. We cannot expect to formulate plans, work out all the details, and put the whole machinery in operation at the start.

While we have the subject before this Society and there is considerable interest awakened, I would like to move, Mr. President, that a committee of three be appointed of ways and means by which a reading course can be established in this society—and I should hope that it would be the means of encouraging other societies to adopt the same thing and coöperate with us—the committee to make its report at the next meeting.

Motion seconded and carried.

DELTA SIGMA DELTA FRATERNITY.

The semi-annual meeting of the Supreme Chapter of the Delta Sigma Delta Fraternity was held in Chicago, Monday evening, January 25. The Constitution and By-Laws were revised and adopted. Drs. J. W. Slonaker, of Chicago, and C. B. Rohland, of Alton, were initiated into membership.

The first annual banquet of the Supreme Chapter was given on Tuesday evening, January 26th, at Kinsley's. About seventy brothers of the fraternity participated, and from beginning to end throughout the banquet, its speeches, etc., a general good fellowship prevailed, and when the members separated it was with a hope of early reunion. The annual banquets of the Delta Sigma Delta Fraternity will be looked forward to with many pleasant anticipations.

The following were the toasts replied to :

"Welcome," D. C. Bacon, S. G. M. "The Supreme Chapter," R. B. Tuller, S. W. M. "Our Honorary Members," G. V. Black. "Alpha Chapter," W. L. Webster. "The Infant Class," P. J. Kester. "Beta Chapter," Manning A. Birge. "The Dental Profession," E. D. Swain. "Gamma Chapter," Geo. B. Perry, P. G. M. "Epsilon Chapter," T. W. Brophy. "Our Absent Friends," Geo. J. Dennis. "Zeta Chapter," R. H. Allen. "The Ladies," Edmund Noyes. A quartette, consisting of George Gould, B. D. Barker, Frank E. Phillips and Chas. R. Currier, interspersed the speeches with vocal music.

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THE ENDOWMENT OF DENTAL COLLEGES.

It had been our purpose to discuss this question last year but the press of matter and other contributions caused the subject to lie dormant until the present.

In all institutions where a dental department is attached to an university, the presumption is that such schools are not dependent on the fees of students for the support of the teachers and other necessary expenses of the department. Is this presumption correct? In Michigan, Minnesota, Iowa, Pennsylvania and Maryland this is so, but not elsewhere as far as can be ascertained by inquiry *not* addressed to the secretaries or deans of the dental faculty. If we are in error we will cheerfully make correction in our next issue.

This state of things brings up the question of the endowment of dental schools so that the fees of students will not cut a figure in their possible entrance or rejection. There are few examiners not directly connected with every dental college or department, in fact we do not know of one. This being true it may be seen that favoritism, or fatal good nature, or avarice may tempt an examiner to be too lax and this laxity in one intently dishonest will fill a low grade school so full of pupils that the effect of their ultimate graduation will lower the professional tone for years. Once graduate inferior men and control of them is lost; graduate none but those of a superior grade and the upward tendency is assured. How soon will some of our rich and philanthropic dentists begin

the work of endowing a single dean in a dental college or a dental department where the pay of the teacher is small and can only be increased by admitting more students? More can be accommodated. This is a subject that deserves careful consideration and the best method of doing good for the profession and the people is to render the teacher free from necessity of wondering where his compensation is to come from. By paying teachers for their time and paying liberally we get the best work—an endowed school or chair will give the best work—other things being equal, if the teachers are not bothered by the financial details or worrying about their salaries.

Who will be first to start the movement, an individual or an Alumni Association?

THE AMERICAN DENTAL ASSOCIATION.

In looking over the transactions of the American Dental Association for 1891, you will find the text of proposed amendments to the constitution. We cannot predict what the action of the association will be, but we hope that the wisdom of the body that convenes at Niagara Falls next August will fix the date of meeting in an elastic manner, so that at one season of the year it will be possible to meet anywhere in the south or west without making it obligatory to always meet the first Tuesday in August, as is now provided. The fixed date has much to do with making our National Association a northern, western and eastern dental association. In order to render it a compact representative body it is a necessity that several sessions should be convened in various portions of the south and southwest in the next few years.

It might be well to meet in May, 1893, in Nashville, as a starter for the World's Columbian Dental Congress, which is fixed to be held in Chicago, August 17, 1893.

There are too many progressive men in the south who would be desirable as members of the American Dental Association for the association longer to confine its meetings north of Mason and Dixon's line. Let the change be made.

THE CONGRESS, 1893.

At the late meeting of the executive committee held in Chicago, at the suggestion of Mr. C. C. Bonney, President of the World's Congress Auxiliary, the word "meeting" was dropped and the

word "congress" adopted. Now the correct title is "The World's Columbian Dental Congress," to meet in Chicago, Monday, August 17, 1893, and continue until August 27, 1893. Success to the Congress.

THE THEORY OF GROUPS.

The *Medical Record* in a recent issue, referred to the peculiar circumstances which result in the presentation of cases to the physician in groups. It is true that zymotic diseases always do appear in groups and that probably many other diseases are epidemic or prevalent for good reasons. But there seems to be no cause why accidents for instance, should appear in groups, why the physician who is called to set a broken right leg in the morning should by the unseen hand of fate be guided to the bed of the man who broke his left arm in the evening of the same day. Nor is there any apparent reason why the physician who has been waiting for the god of gynecology to send him a "case" for a week, should without warning, in one day be the "deliverer" of three additions to the community—all boys. But such is a fact, and the philosopher is looking for a "theory of groups." Have not dentists noticed this same condition in the practice of their profession? For a day or so probably every troublesome tooth opened into will contain a dead pulp just on the verge of resulting in an alveolar abscess. Mayhap he has not seen an exposed pulp for a week, when all at once three or four cases are under treatment. Mrs. Evingston just complained of the loss of that "beautiful" filling, bemoaning its short life, when Miss Souside conveys the painful intelligence that she cannot understand how it happened so soon—the crown's off. If that old rubber plate of Mr. Simpkins with its semiannual "tooth off" does not reach you on the same day, its because you left the office early.

Undoubtedly certain diseases, as pericementitis, exposure of the pulp, alveolar diseases, gingivitis, etc., are directly influenced by changes of temperature and the rise or fall of barometric pressure, especially if sudden. The electrical conditions also have some influence. But why do several antrum cases come at one time into the hands of the general practitioner? Or why does he who uses mostly vulcanite find at once two or three gold plates on hand? And why this week probably ten gold fillings to every one of amalgam, and next week the reverse? Why do repair cases appear about the same time, regulating cases, often of twin-like similarity, why do they come together? Yes, why?

GRADUATES OF DENTAL COLLEGES.

We believe that the profession has almost outgrown the custom still prevalent among dental journals, to annually publish a list of graduates of the various dental colleges. The number of colleges has rapidly increased during the last decade until we now have thirty in active operation. The classes have increased in numbers to such an extent that about 1,500 students will graduate this year. The publication of these lists compels us to use space, which if devoted to other reading matter would prove more valuable to the majority of the readers. Information regarding any particular graduate, or any special class can be readily obtained from the dean or secretary of any college, inasmuch as all colleges publish annually a catalogue containing the names of its students and graduates. For handy reference, a much more compact and suitable method than publishing the lists in the dental journals, would consist in the publication of an official, correct list annually on the part of the National Association of Dental Faculties. During the present year we will publish the names, but in '93 the practice will be discontinued.

EXIT ARCHIVES OF DENTISTRY.

We regret to announce the sad news that the *Archives of Dentistry* is no more—at least not for '92. Our St. Louis friends have laid down the pen—to be resumed, we trust, with increased vigor some time in the future. The *Archives* has been one of the most welcome visitors to our exchange table, and we hope the many friends of progress in dentistry who have contributed to its pages will continue to let their light shine in other journals.

HUNGARIAN DENTAL JOURNAL.

In January there appeared under the editorial management of Dr. Joseph Iszlai, at Budapest, Hungary, the *Odontoskop*, the first dental journal to be printed in the Hungarian language. We bespeak for the editor—who is a well known writer—unlimited success.

The languages in which dental journals are now published are: English, French, German, Italian, Spanish, Russian and Hungarian. Until a year ago there was also published a journal in the Scandinavian language.

TOO MUCH MATTER.

We are again compelled to add to the number of pages of the DENTAL REVIEW beyond the number originally decided upon, and we are also compelled to ask the forbearance of those whose communications are now in our hands and which ought to be in print ere this.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

To Editor of the Dental Review:

The gavel has fallen and the 23rd Anniversary of the First District Society of New York is a thing of the past, in fact, yet not an event which memory will fail to sound with honor for many years to come. So far as the carrying out of the programme, which was so admirably arranged by the Executive committee, everything has gone smoothly and profitably throughout the entire session and by acclamation of all in attendance said to be one of the most successful meetings ever held by the Society. Nothing occurred to mar in the least degree, the harmony of the meeting, from beginning to end. The meeting commenced with a liberal attendance from many quarters of the country and all were made to feel at home by an exceedingly felicitous address of welcome, by the President, Dr. Norman W. Kingsley. We have listened to him many times, but *never* heard him more to our satisfaction than on this occasion. He generously acknowledged that it had been discovered that the famed city of the Empire State, could no longer hold the palm of being the leading city of the New World, but that it could only be ranked in the future as second. The great city of the future was to be Chicago—they had captured the World's Fair and were entitled to the belt, they had won it fairly and so the wind was out of our sails and it could now ably sustain the title of the "Windy City." He paid a glowing tribute to the united energy displayed and hoped and predicted that Chicago would fully vindicate the fullest expectations of the whole world. He playfully criticised their study of the almanacs in connection with dates of Columbus' discovery of this continent, since they had set the date for celebrating the momentous event in '93, when, according to all reliable historians, it occurred in '92. Dr. Crawford was called up-

on by the President to respond, in behalf of the visitors, which he did, by introducing himself as hailing from the Rock City of the Cumberland (Nashville, Tenn.) He proved himself a right smart product from that country and captivated all by his marked oratory which one could see was "pure and simple, native." His speech made manifest that he was well informed on all the ruling topics of modern thoughts and he also disclosed himself a faithful exponent of the belief that the profession had a mission of importance on this planet second to none other and that the signs of the times fully indicated that they would be equal to the demand.

The first paper was by Prof. Peirce, of Philadelphia. Subject: Some Thoughts on Transformism. As this paper was the beginning of a series, it was at first given up largely to historical statements. It showed intelligent and thoughtful research from the beginning to the end. It seemed to be disposed to lead up to the purpose of a compromise of Darwin's views with his own; of the latter many are somewhat familiar and may be given in the mere statement that the tastes and necessities of the animal kingdom are changed according to their changed environments.

The discussion was opened by Prof. Heitzman, and was listened to with enthusiasm by all. In a general thought he was much in unison with the essayist, and, by his preëminent knowledge of the morphology of the tissues, made a discriminating and intelligent instructor on such a far-reaching subject. Prof. Heitzman, to be fully, or partially, appreciated, needs to be heard in person. He was up to high tide on this occasion. His familiarity of thought in the dissection of the paper made him a profound adjunct to the subject. Dr. J. Smith Dodge, well known in New York, followed. The Doctor is an intellectual treat anywhere you may hear him. He is by profession a dominie in the Universalist Church, and is justly nominated the orator of that denomination. He was much in concord with the essayist, although showing not a little growth in that direction, as shown in former expressions, at an earlier date, before the Odontological Society. The Doctor is highly practical, and in this direction he applied this to the subject. He emphasized one remark that will not be overlooked by some. He declared that "Dentistry was not a science, but was preëminently an art." I will add right here that in an article by Dr. Edison, of New York, in the *North American Review* entitled, "The Past and Future of Medicine," he says, "The formation of medica, is art." Dr. Kingsley will enjoy both these statements.

I noticed an elevation of the superciliary muscle, as Dr. Dodge uttered these remarks, so much in unison with his belief. Dr. Dodge proceeded to show how this subject could be applied practically, simply by observing in their practices the progress which followed a legitimate and intelligent effort to make dentistry a factor in the preservation of teeth. In other words, I would say that the constant emphasizing of the importance of our services is making such an impression on the minds of our patients that they give more earnest heed, not only to their own necessities, but decidedly more to those of their children, and in this way lessening the need of repairing the wasted tissues of the teeth.

Dr. Stubblefield, of Nashville, Tenn., added to the discussion a cultured dissertation, although showing not a little disposition to evade the scientific phase, and finally ended by italicizing the statement that concerning the theory of man being a direct descendent of the monkey, he was disposed to fall back upon his implicit belief in his Heavenly Father and leave the whole question in his hand for fuller definition.

Dr. Case, of Jackson, Michigan, opened the second session by an illustrated lecture on the "Borders between the Natural and Artificial in Crown and Bridge Work." He proved himself a "master of the situation" and eliminated many important points which *practical men* will be able to make profitable. Dr. Crawford followed in discussion, and added not a little to the fund of information, but largely from a conservative standpoint. He is a mechanic. Prof. Essig, of Philadelphia, delineated his familiarity with the subject by an artistic handling of chalk.

Dr. Van Woert, of Brooklyn, followed. He is a young practitioner of mechanical fertility. Dr. Bliven, of Worcester, showed his sharp prolific ingenuity by voice and chalk. He is *smart*; he not only knows it but it is conceded to him—this might shorten the breath of a conservative. In all the crowns he has ever made *only one* has ever broken. Amen. Yea, verily. Dr. Watkins, of New Jersey, made the closing speech on crowns and border lines. Watkins is a thoroughbred "Yank," full of sharp common sense. He looked real nice this time, so blooming and cheek (so much) so cherry red. Some will recall by my last letter that I spoke of the experiment "he had caught onto"—the biozone treatment. Well, he is in it. He was so brilliant. He'll get there. He always goes with one eye open to see into anything new and fresh.

Once on a time in an audience a misfortune overtook an individual that produced beauty unadorned, and a precise old fellow in his sincerity of good will, unfortunately called attention to the catastrophe, and to make protection doubly sure, calls out in thunder tones that any one who looked that way would be struck blind. In an instant one old curiosity shop took in the situation and sung out, I'll go one eye on it. Dr. Watkins takes risks—not in this line but he knows a good thing when he sees it, and somehow he does see it. He pulls them right to the bull ring in Jersey society. He is in it as a right smart chairman of the executive committee. He is on the antismoking advocacy and I think he will not let up on that amendment to his report, which proposed making cigars a substitute for cigarettes.

We think we may safely say that a resumé of the discussion on borders between crowns and bridges, indicates that rings or bands are not so much considered essential as formerly. Although the essayist did emphasize that he could burnish his band into deformities of the root, we think he made himself clear. Mention was made favorable to the use of all porcelain crowns. This will accelerate the Pittsfield, Mass., dentists and all porcelain crown advocates early in the season.

The third session was a proud one for the essayist—Dr. Norman W. Kingsley. Subject: Adenoid Growths, Mouth-breathing, Thumb-sucking and Their Relations to Irregularities of the Teeth. It was an occasion that covered the doctor with widespread fame for all time, even if he may not chance to ever evidence his brilliant skill again before his profession. Long life to the doctor and many returns. The exhibition of beautiful life-sized profile models, illustrating the doctor's subjects, were things of beauty and a joy to all that saw them. It was one acclaim that he had reached his zenith to date. It was worthy to be called a crowning glory. The doctor is on record for claiming that dentistry is an art. Many may not, and do not hold to this idea, but you will see that he is in accord with others, of more than ordinary thoughts. All things are settled when settled right. This exhibition was one of a series he is preparing for publication, the first already having appeared in the January number of the *Cosmos*. This effort wins the spurs. All those that took part gave unqualified praise to the doctor. In a mass statement it may be said that a general concurrence with the doctor's conclusions was

made manifest. So far as this occasion notes it does not count in favor of adenoid growths producing high vaulted arches, while it may produce deformities of the jaws by the habit of thumb-sucking; yet not always a very forcible evidence of favor in this decision was contributed by Prof. Guilford, of Philadelphia, in the form of a model and the history of the case. It came out that it was possible that open mouths—mouth-breathers—caused by a fixidity of the molars and elongation, could come about by the mouth remaining open, and thus allowing the molars to elongate, as does often occur, in the loss of an occluding tooth.

This session was marked, from first to last with hearty enthusiasm. Dr. Kingsley, in calling upon Dr. Farrar to close the discussion, paid him a very unique compliment as a worthy rival or competitor, one that did honor to the art, in a superior way. Dr. Farrar returned the same in a well prepared paper. These things are full worthy of our admiration, for they do add luster to our profession. To undertake an adequate description of Dr. Kingsley's exhibition would be a useless effort. Let it be understood that these portraits in plaster, were works of art, but not correct as regards the entire facial expression—the deformities were *fac similes*, but the rest had been changed from the originals for disguise. The deformities were as before, and as afterward, besides this, models of articulation, with mechanical devices which were used in each case. This collection as seen, ought ultimately to occupy a niche in a future place which, it is hoped, may, through a larger liberality in ambitious culture, be sure to come. The rare beginning of museum deposits was purchased by the Odontological Society, by the ardent wish of Dr. Barrett, of Buffalo. I refer to the remarkable collection of dentition, probably unequaled in the world. These movements are worthy of emulation in all departments. If not in this generation of practitioners, still we predict it will come. We do not doubt but that when Dr. Kingsley's full series of articles are seen in publication, with the illustrations, it will stir the latent talent in some one now unknown, and the future will add new luster because of those incentives. The fourth session was under the chaperonage of Dr. Crouse, in the interest of his pet subject, the Dental Protective Association—Its past, present and future. The doctor carried the conviction to *all*, that things had come to such a state of development that only a serious consideration of the vital interests of this body and the work in hand would be worthy of

the united effort of the largest number possible. For this, Dr. Crouse earnestly plead.

There is a stronger conviction because of this conference, that Dr. Crouse not only needs this aid and coöperation but surely he has earned it and it will be only a base ingratitude if he does not have it. We predict he *will* have it. The Doctor was plied with much questioning and some of it seemed frivolous and doubting. Our gratitude should be shown by our *confidence* being gained by works which have been productive of good. Already the crown patent has been defeated by the highest court and doubtless it is true, as Dr. Crouse said, this organization has saved the profession a million of money. This is their first fruit which it is stated is backed up by sensible evidence and that only a fair test of the bridge patent in court, and they will be able to antedate all patented bridge inventions. A spirit was earnestly evinced that out of this meeting will come a decided effort to not only increase the membership, but give the moral support that Dr. Crouse so much needs. He states that the circuit in which this question of bridge litigation must be carried, to its final issue, must occur in New York and Connecticut. We judge from general assent that this conference will bear good fruit. We are sure that a healthy feeling is growing that the mission of this protective body is a wise one. Doctor, be of good cheer. The origin of pus, in the third session, was ably presented by Dr. Stubblefield who did not much favor the theory that its origin is by bacteria. The Doctor is a cultivated addition to the ranks of our calling and is in every way an attractive advocate. More and more this will be so as the standard is elevated. We are optimistic just here. Dr. Freeman led in the discussion by a well prepared paper, mostly a classification of the bacteria family and more leaning toward the initial step by bacteria. Dr. Heitzman made decided emphasis on the point that this question was not well enough understood to dogmatize.

Dr. Geo. Allen leans heavily to the bacterian theory and emphasized the fact that a majority of surgeons operated only in association with antiseptics. He referred to the advance made in abdominal operations, because of the general belief of the origin of infection by bacteria. The experience of the unexcelled surgeon, Taite, of London, does not emphasize this theory, and no surgeon has advanced upon more extremely dangerous territory than he. He did give the German surgeon an intelligent hint, when inter-

rogated as to what he attributed his eminent success. Mr. Taite, casting a significant look at his questioner's fingers, said, one thing I am fastidious about is this, I keep my finger nails clean. This will apply to dentists also, for it is far from being properly regarded. Dr. Allen is one of those kind of persons who feels called upon to express themselves very dogmatically. He does, doubtless, think he believes that bacteria originated all the disorders that human flesh is heir to. We think we do him no injustice by injecting his last remark in that discussion. Dr. Heitzman incidentally referred to a demonstration produced by Dr. Bödecker recently, and exhibited to him: a specimen of dentine that had been so acted upon by a phosphate filling, that he was readily able to distinguish the reticulum beyond all questioning, and even under quite low powers. Dr. Allen took occasion to challenge the proof of such a statement by remarking that if Dr. Heitzman would put this specimen into the hands of experts—such as he could name—he would prove that no such things existed. All the notice Dr. Heitzman made of this was to pleasantly smile and let it pass. This, it will be recalled by careful readers of the journals, is the same old bone that Dr. A. has been gnawing ever since Dr. H. announced his views upon this subject. Somebody will know the truth of these things ultimately. Dr. Heitzman referred to the theory that has been advanced—that bacteria did exist internally. He said there were instances where persons had received a shock and it had developed inflammation in the femur and had focalized in its destruction of tissue, in the patella. There was a little mystery in such action, according to the sparseness of knowledge of these things, and it was not strange that such action was fastened upon as *prima facie* evidence that it was originated by bacteria.

One portion of Dr. Heitzman's remarks are worthy of special mention, viz: the eulogy he paid to the last published paper by the late Dr. Atkinson read before a section of the American Medical Association at the Newport, R. I., meeting, subject: The Origin of Pus. The doctor had placed 100 copies in Dr. Heitzman's hands for distribution. He had with him sixty copies which he passed among the audience. We will add that in our judgment no paper has ever emanated from the doctor's brain more fertile in profit to any practitioner who is searching for knowledge. He went so far in some remarks he made in connection with this subject we considered the little monograph immortal. We had read and re-read

it, and each time with renewed interest and profit, and think the REVIEW would gratify many of its readers if they would republish it. The subject, as stated in the programme, was "The Formation of Pus Reviewed." The drift of the discussion tended toward the bacterian theory. The sixth session was the last on the programme. Prof. John Marshall, of Chicago, was announced as the essayist; his paper was in the hands of the executive committee. The eminent gentleman was not on hand, and at the last moment out of a clear atmosphere the lightning flashed along the wires between New York and Chicago, and the paper was consumed. Nothing but the title of the paper left for discussion "A Plea for Extraction and Replantation in Cases of Persistent Alveolar Abscess." The shots came so thick and fast, and so effective from all that spoke upon it, that the subject was left more holy than right—eous. Dr. Kingsley closed the twenty-third anniversary with some very appropriate remarks, in which all fully coincided. In substance it was an expression of his hearty gratitude for the exceeding good will that had pervaded the entire session. Everything so far as the meetings were concerned, and those that had attended them, had been in every way gratifying to him, and there was no need of saying to those present that the proceedings would reflect honor upon the First District Society and add new luster to its world-wide fame.

This was not overstating it, for it was the prevailing assent that this meeting had never been excelled. Dr. Kingsley said that the spirit of the session was the fullest recompense to him personally and it would be joy to him for all time. The Dr.'s remarks were listened to with a hush of every breath, and the fullest manifestations were given by long applause which carried conviction of concord and hearty fellowship.

We have never heard a speech from Dr. Kingsley that was so marked with pathos and well selected sentences.

The clinics were largely attended and marked interest was shown on every hand. These clinics bring out the practical enthusiasm. I append the clinical programme. These things mark the progressive energy that is a factor among us for growth and usefulness.

CLINICS.—TUESDAY, JANUARY 19TH, 9 A. M. TO 1 P. M.

1. Dr. Sydney F. Stowell, Pittsfield, Mass. New Removable Crowns and Bridges.

2. Dr. F. W. Rehfuss, Philadelphia, Pa. Massage in Dentistry.

3. Dr. W. E. Davenport, New York, N. Y. New Pluggers and Filling with Gold.

4. Dr. Geo. V. I. Brown, Duluth, Minn. Gold and Porcelain Inlays.

5. Dr. Rufus G. Stanbrough, New York, N. Y. New Crown System.

6. Dr. F. T. Van Woert, Brooklyn, N. Y. New Lathe for Grinding Porcelain Inlays for Irregular Cavities. Also, Method and Instruments for Bridge and Crown Work with Removable Porcelain Faces.

7. Dr. J. Y. Crawford, Nashville, Tenn. New Method of Widening the Jaws.

8. Dr. S. C. G. Watkins, Montclair, N. J. Self-Adjusting Head Rest. Filling with Glass Instruments.

9. Dr. T. P. Lennox, Toronto, Canada. Hot Nitrous Oxide for Sensitive Dentine.

10. Dr. Z. T. Sailer, New York, N. Y. New Adjustable Napkin Holder.

11. Dr. F. A. Roy, New York, N. Y. Filling with S. S. White's New Mat Gold.

12. Dr. John L. Gish, Jackson, Mich. Electric Hot Air Syringe. Electric Water Heater.

13. Dr. A. H. Gilson, Boston, Mass. New Method of Implantation.

14. Dr. T. O. Oliver, New York, N. Y. Rotary Blower.

15. Dr. A. McAlpine, Bradford, Pa. Diamond Drills and Method of Making.

16. Exhibit of Novelties, &c., by Dental Mfg. Co.'s.

17. Electric Motor, Hyer-Sheehan Co.

18. Electric Head Lamp, Ford Surgical Inst. Co.

19. Electric Batteries, Motor, &c., Bryan, Enholm & Co.

20. Electric Mallet, Wm. E. Gibbs.

21. Instrument Sterilizer, Flanders Mfg. Co.

22. Novelties, Chase Combination Plate Co.

In one of my former letters, Dr. J. W. Clowes' big deal in amalgam was noticed. It was the construction of "causeways" for the purpose of providing masticating surfaces for spaces where the natural organs had been removed. At the time of writing about

this new invention, for I think it will be admitted that it is one, I had only seen the models, but I asked the Doctor that when he had an opportunity, I would much like to see some practical work. He has now afforded me a good chance. I am sure my readers will admit that I have seen a model piece of work. The patient, a gentleman about forty years of age, having twenty teeth with intervening spaces, both upon the upper and lower jaws. As learned, it was a case of extreme "Riggs Disease," many of the teeth loose. These teeth have been put into a sanitary condition, by removing all foreign matter, one tooth only has a dead pulp and this with abscess. The remaining teeth have had all the pulps removed, using the pulp chambers for retainers of the frame work for the causeways. On this has been moulded amalgam into the spaces of lost teeth, giving a semblance to these in form, so that when completed it forms a complete fixed causeway from twelve year molar to twelve year molar. Let it be understood that this amalgam is formed compactly against the gum tissue, leaving no space for secretions. I took particular pains, by mouth glass, to examine the appearance of the tissues and also to notice whether there was any unusual odor. I found the tissues nearly normal in color, quite as much as I would with a constitution such as exhibited. I found no unusual odor.

On the whole, I am able to report a very remarkable piece of work, which would I am sure, be admitted entirely original. It is neatly done, as Dr. Clowes makes *all* his operations. It may be noted that Dr. Clowes is not an amalgam slouch, nor does he fill teeth with his thumb. Dr. Clowes has been in the swim of the "400," for forty years in dental practice in New York City, and no one of its operators is better known or more respected.

He has his views of a salvatory practice, and he has given them freely, practically those on "Oral Gardening." Dr. Clowes' office is on Fifth Avenue, and doubtless he will give any information to any one who desires it and should they chance to be visiting New York, they will be very cordially received, and my word for it, they will see one of the finest fitted offices in the country, complete in all that is useful and in fine form. This case I have described is only one of many, from one space filled in, to varying numbers. He has been operating on this plan nearly three years, I think. I met a patient at this same visit, who had one of the doctor's first attempts. The patient spoke in high praise of its value to

him. He had pieces on each side of the lower maxillary, including the molars. The doctor showed me models of what he considers a very novel case which has been in valuable use for some four months and indicating good service indefinitely. This represents the superior cuspid root, the lateral and central, considerably deformed by caries, pulp dead, and a bare process or jaw from the cuspid root; back on this foundation he has constructed a causeway, having made a firm foundation on the fractions of teeth. His next thought was how to make firm and practical the opposite end. This is what he has accomplished: He laid bare the bone at the point for the twelve year molar, etc, buried a dovetail mortise and from this he has formed the opposite end of his causeway by building in an implanted amalgam molar, and the operation is a success up to date. In the language of the late Dr. Geo. Q. Hawes, of New York City, when Dr. Clowes, uncle of Dr. Barnum, introduced rubber dam for the first time, before the New York Society of Dentists. After Dr. Clowes had sat down, Dr. Hawes, noted for his dry quaintness, arose and looked to right and left, in amazement, and exclaimed, "What next."

P. S. "Pardonnez-moi," but I must echo what has just come to my notice, at the risk of giving the headache to the *Western Dental Journal*. If somebody's head is off come to New York and he will get a head put on him. If the *Western Journal* knew how we did not say in our letters all that could be said—New York is so large compared with Kansas City, so much happening every moment and so much more that is going to happen, and that is what I want to tell you in this P. S.

W. W. Walker is on the war path once more. He has in charge a big mass gathering in March. Nothing ever like it. It is in the interest of the American Dental Protective Association. That body wants men, and men it is going to have. A large hall is engaged with a band of music, etc., etc. It is intended to make Dr. Crouse feel that he has the whole earth at his back; in fact, it is going to be a compliment to his honest zeal in a good cause. New York, New Jersey, and all the New England States will be there; and all the other grand things that are going to be flushed on us would fill a page. W. W. W. is going to play his best card for a big success. The ire is coming up and it will be like Jared Perkins, of Albany, who at the American Dental Association's meeting in Chicago in '65, arose in an excited manner and said:

"At home in quiet life I weigh 148 pounds. Now (b— g—), I am mad, and when I am mad, I weigh a ton." With one voice they say, sustain the D. P. A. "Amen."

P. S. Supply the word *combined* to plastic fillings, referred to in my last letter, in connection with Dr. Line's paper.

Ex.

REVIEWS AND ABSTRACTS.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION, THIRTY-FIRST ANNUAL SESSION, 1891. PUBLISHED BY THE S. S. WHITE DENTAL MANUFACTURING CO., PHILADELPHIA.

This handsome volume is larger than any of its predecessors for a good many years, except the joint transactions with the Southern Dental Association, having 272 pages. The excellent editorial work of the Secretary, Prof. Geo. H. Cushing, with such assistance as the distance of Chicago from Philadelphia made necessary, and the first-rate specimens of book making that have been sent out to us so many years by the S. S. White Company, and by H. D. Justi, last year, are so well known by everybody as to need no mention here except for the purpose of acknowledgment.

The Association now shows some real waking up to the necessity of finding some plan for conducting its affairs that offers good prospects of increasing its numbers, its representative character and the amount of its useful work. The President, in his annual address, made a number of useful suggestions, and the committee on Constitution and By Laws offered a good many amendments, on different lines, which ought to be carefully studied by all the members and by the committee till they agree, if possible; the chief question being, if the present propositions are satisfactory, or whether a constitution, &c., can be proposed at the next meeting so much better than can be made out of these, as to justify a year of waiting.

The main object in making changes appears to be to reduce as much as possible the *time* of the Assembly, and the number of its members that must attend to what is called "miscellaneous business." It seems better to have a revolution once in a while if the men intrusted with business do it too badly, than to tire and disgust the whole Assembly in doing it, perhaps, no better.

Some plans have been set in motion, not dependent upon

amendments to the Constitution, which are very important. These relate to making the Society truly representative by inducing all societies to send delegates and providing for reports from them of the work their societies have done.

Dr. Ottofy's report shows at least 103 societies, but there were represented in the Association by delegates, only twenty-two societies, from fifteen States and the District of Columbia, leaving eighty-two societies and twenty-nine States unrepresented. It would appear that here is a hopeful field for systematic efforts and persuasion on the lines proposed by the report.

The volume contains twenty-three papers and reports which have been pretty fully published in the journals and cannot be noticed here in detail. Dr. E. S. Talbot has a very elaborate and fully illustrated paper to show that mouth-breathing is not the cause of contracted jaws and high vaults. Prof. John S. Marshall read two papers, one on the use of pyoktannin for treatment of cancerous growths, and the other on electricity as a therapeutic agent for treatment of hyperæmia of the pulp. Prof. T. W. Brophy made an interesting report of his operation for closure of cleft palate as soon as possible after birth, which was followed by considerable discussion of the subject.

The principal objections related to the severity of the operation and danger of death from shock. Whatever may be the relative danger from shock to a child a few days old as compared with one a few months or years older, the deformity of a cleft palate is so horrible that probably many parents would prefer to take considerable risk in an attempt for its radical and immediate cure than take the chances attending upon delay.

Several other papers have equal or greater interest than some of these mentioned, especially the one by Profs. Carl Heitzman and Frank Abbott on senile atrophy of the upper jaw. Those mentioned have been referred to especially to show what the near neighbors of the REVIEW have been doing for the association.

One other paper (also by a Chicago member) relates to a subject of great interest to the profession, and likely to require some time and much effort and good sense to bring about a solution that will meet with general approval, "State Boards (the People's Officers) and the Profession," by Dr. C. R. E. Koch.

It was probably unfortunate that the author of the paper could not be there to close the discussion upon it, for it appears to have

been, in some important particulars, misunderstood and consequently misrepresented. In particular, the statement by Prof. Abbott that the paper throws out a general slur that faculties of colleges sell their diplomas for thirty dollars, does not appear to be justified by anything in the paper. Dr. Crawford also appears to regard the paper as a discouragement of legitimate institutions of learning, both gentlemen quite ignoring the fact that there are some colleges that are supposed to be giving their students a very inadequate education.

Prof. Barrett made a long speech, in the first part of which he questions both the capacity and the opportunity of State boards of examiners as compared with the faculties of colleges, to ascertain the qualifications of candidates for practice, and in the latter part contending for a determination of the reputability or otherwise of colleges by a thorough examination of their methods and work by State officers, and then concedes the most important point in Dr. Koch's paper in a form slightly different but capable of accomplishing many of the same results; by asking that the power of conferring diplomas be taken away from the faculties of colleges and given to a State board of regents, as has already been done in case of the medical colleges of New York, whose duty it should be to examine all candidates for graduation and confer the diplomas. This plan would have some manifest advantage and convenience over a reëxamination by State officers, and the tone of the speech tempts the suggestion (made very mildly) that most of the difficulties in the way of obtaining the appointment of competent State officers to conduct examinations will disappear if they are called a "Board of Regents," and set to examine candidates for graduation, instead of being called a "Board of Examiners" and set to examine candidates for practice.

The paper and discussion emphasize the necessity that the parties who are really desirous to accomplish the same ends, namely, the State boards, the reputable colleges, and the better men in the profession, should cordially admit the facts in the case and discuss harmoniously the methods that give best promise of good results without quite so much touchy sensitiveness as has been manifested in some quarters. N.

DENTAL QUESTIONS AND ANSWERS, by Gustavus North, A. M., D. D.
S. Chicago, 1891.

This book contains an outline of the questions and answers of

about fifty lectures; Dental Pathology, Therapeutics, Embryology, Hygiene and Care of Children's Teeth. It is designed for the use of students.

Report of the Commissioner of Education for the year 1888-89. Two volumes. William T. Harris, LL. D., Commissioner of Education, Washington. Government Printing Office, 1891.

ZENE ARTZNEY, 1532. Translated into modern German from the old German text, by Erich Richter, M. D., D. D. S., Berlin, Germany, 1891. This is a reprint of the first dental work published—anonously—in the German language, at Mayence, in 1532. Dr. Richter has translated this literary "curiosity" into the German of the present. The title page, table of contents and preface are reprinted in the laborious and almost unintelligible old German text. It can have been no easy task to modernize the contents of this interesting and curious book.

PAMPHLETS RECEIVED.

Seventh annual report of the Dental Examiners of the State of Minnesota, to the Governor of Minnesota, December 15, 1891.

Dental Infirmary Patients; The Use and Abuse of Dental Charity, by Richard Grady, M. D., D. D. S., of Baltimore, Md. Reprinted from the *Journal of the American Dental Association*.

DENTAL COLLEGE COMMENCEMENTS.

UNIVERSITY OF CALIFORNIA.—COLLEGE OF DENTISTRY.

The commencement exercises of the College of Dentistry of the University of California were held at Odd Fellows Hall, Wednesday evening, December 23, 1891. The term closed December 31. The number of matriculates during the course was 98.

The address on behalf of the Faculty was delivered by Leander Van Orden, Jr., M. D.

The degree of Doctor of Dental Surgery was conferred by Prof. Clark L. Goddard, A. M., D. D. S., Chairman of the Faculty on the following named (24) graduates:

Josephine Wright Armstrong,
Charles Franklin Bauer,
Charles Henry Bell,
John Millard Blodgett,
Cecil Corwin,
D. Carter Elliot,

Charles Avan Meek,
Albert D. E. Milds,
Robert Forrester Millar,
Robert Isaac Moore,
Howard Deloss Noble,
Forrest Hoy Orton,

Philip Foster Frear,
Charles Lawrence Griswold,
Charles George Hyde,
Edwin Chandler Hyde,
William Martin,
John Patrick McCarty,

Frank Harry Phillips,
Harry Griffin Richards,
Harold Lawrence Seager,
Harry Howard Shaw,
George Newins Van Orden,
Gustavus Adolphus Weyer.

PRACTICAL NOTES.

MECHANICAL DENTISTRY.

SYMPOSIUM FOUR—BY A. B. E. AND F. (C. AND D LEFT OUT).

A.—I have noticed in examining mouths where plates were in position, that a great many of them have no air chambers—full plates as well as a great many partial plates, especially gold plates. Is there any special reason for that?

F.—The air chamber does not remain as an air chamber for any length of time. It soon fills up with soft tissue, and consequently if a certain plate be worn for some length of time you have no air chamber.

A.—Is it really an aid to the retention of a partial plate at any period?

F.—Yes, where the teeth do not fit so tightly as to form support for the plate; in other words, where the plate finds its own resting place. But these are exceptional cases.

A.—Is it not better to have a partial plate of rubber or gold made so that it will fit snugly to the remaining natural teeth instead of depending upon an air chamber and leaving a space between the plate and the teeth?

E.—Yes, it is. But there is an element of danger in such plates in always having the plate and the teeth in contact, especially if the plate is worn at night during sleep.

A.—Is that danger greater than the danger of producing disease by the impingement of the gum margin between the necks of the teeth and the plate, and causing a recession not only of the gum, but of the alveolar process, and possibly resulting in disease of the periodontal membrane?

E.—My idea is that such a plate should come tightly around the teeth. It cannot produce pressure for any length of time; the plate will not any more than just touch such teeth, but if there is any amount of pressure against them, the teeth move very quickly.

I think the best method is to have the plate just come to the necks of the teeth with no gum between them, and kept absolutely clean.

F.—The drift of the question is toward partial upper plates. If we refer to a partial lower plate, where only a limited alveolar border serves for a bearing surface, the conditions are different. The recession of the gums is possibly due to pressure of the plate.

B.—Is there ever a partial plate made nowadays with an air chamber?

F.—Yes. We see them.

B.—Is it considered proper practice to use an air chamber in the case of an upper plate?

F.—I should say no.

A.—Has not the time of an air chamber for the retention of a partial plate passed?

F.—There is no necessity for it either in the partial or full plate; in fact, I do not use it at all in the full plate.

B.—How often, in making partial and full plates, do you use an air chamber?

F.—I have not used an air chamber for four years.

B.—I was going to say probably in one plate out of fifty you would use it.

E.—Do you depress the plate in the higher part of the mouth sufficient to leave any space?

F.—Yes.

E.—Does not that amount to an air chamber?

F.—It does if you leave sufficient space to compensate for the settling of the plate against the soft tissues. You merely have fitted the mouth.

A.—Is it your custom in making a full denture for the upper jaw to let your plate extend back as far as the termination of the hard palate, so that it will be retained firmly when the patient attempts to masticate food, but will only remain in position in a lax state at any other period?

F.—I prefer to extend the plate beyond the palate bone, then by scraping the cast I have it bear directly on the soft tissues.

A.—Do you follow that out along the alveolar ridge and clear around the tuberosity, so to speak?

F.—The scraping process?

A.—Yes.

F.—No, sir.

A.—Why doesn't air get in between the lip and the rim of the plate when the patient partially opens his mouth?

F.—The opening of the mouth will tend to draw the soft tissues tighter around the upper edge of the plate.

A.—That is true theoretically, but practically, is it not a fact that unless it has been trimmed high up on the alveolar ridge making a complete circle, that you do not have complete retention at any time?

F.—In one case in which I did that, I was uncertain at the time whether it did any good or not. It was a difficult case from all points of view. The mouth was exceedingly hard all over; there were no soft spots. It was drier than any mouth I ever saw.

A.—Was the patient an old person?

F.—The woman was about thirty years of age.

A.—It is very unusual to find a dry mouth in a young person.

F.—I was unable to make any plate to stay in successfully. The last plate (the third one I made) stayed in better than the first. In that case I suggested scraping the cast at the limit of the plate all around.

B.—As I understand it, it is a much better way to examine the palate, where the plate is going to touch, and to trim only at the hard portions, leaving the soft parts as they are. I do not see much advantage from trimming all around evenly. If you trim only at certain points, then you get a much better adaptation.

F.—It would be well to define the word "trim." I use it to make the plate bear harder; you (B.) use it to make it bear easier.

A.—I have seen several plates—full upper dentures—made by a dentist in Chicago, and they seem to be retained in the mouth better than any similar class of plates that I have ever seen, due, I think, to the fact that they pass high up on the alveolar process and uniformly around the tuberosity and across the posterior portion of the palate, going a little beyond the termination of the hard palate. All of these plates have a slight ridge resembling the rounded portion of a split wire of say about the sixteenth of an inch in diameter.

E.—On the plate side?

A.—On the side toward the mucous membrane, and those plates stay uniformly well.

B.—That is done by cutting a groove in the model.

A.—He began at the median line high up on the alveolar process and passing around and going back to the starting point. None of these plates ever had an air chamber, and an air chamber in my opinion is not a necessity in any case.

B.—Probably, with rare exceptions.

E.—Does not that sort of a bead around the margin of the plate really make an air chamber of the whole plate?

A.—Well, in one sense it does, but in another, it does not. It pulls a certain small area of tissue into the plate where it really does no good from the beginning. The question of the retention of plates having been spoken of, when you have decided to make a partial plate either above or below (excluding bridge work), what guides you in the selection of materials—rubber, gold or any other substance?

E.—Where I am at liberty to use my own judgment, I should always use gold.

F.—I, too.

A.—You think that is the best material?

B., E. and F. (simultaneously).—Yes.

A.—Do you use backings or solder the teeth, or do you make some of the partial plates with rubber attachments?

F.—If the teeth are single teeth, I should solder them to the plate. If the teeth were a series of three or four, I would attach them with rubber.

E.—That is my method with some exceptions.

F.—One exception would be where the teeth are very short, making it difficult to attach with rubber strongly.

E.—The point is to have the space filled to prevent lodgment of saliva.

A.—In attaching rubber to a plate and a tooth, what is your method of securely fastening the two materials to each other?

F.—I do it by means of loops either of wire or solder to the plate.

A.—You never depend upon carvings or etching it? That is an insecure union, is it not?

B.—It is a help. If you do not solder a wire around where the rubber joins the gold, etching the plate helps there, as the rubber catches in the etched gold, and you prevent the secretion from getting under the plate.

F.—In soldering on loops, see that they are soldered near the

edge of the plate, otherwise the plate springs from the rubber and springs back again.

A.—Do you ever make a flange of gold so that the rubber is vulcanized beneath the flange, furnishing a finished joint in these partial plates?

F.—I have done so.

A.—Do you think it is worth while to take that extra care?

F.—I do not. I do not like to do it. A plate coming from a die that fits the mouth at the time needs the most careful manipulation afterward, and even then we sometimes fail to prevent the plate from being changed in shape.

A.—Could not that be done by swaging a small replica of the plate and soldering that to it?

F.—That could be done. In soldering a plate after it has once been struck up, unless it is soldered in such a furnace as the continuous gum furnace, it is almost impossible to prevent one part from being red hot, and the other being red or black. That means of course, greater expansion and contraction in one part than another. It means a change of shape, and one should manipulate the plate as little as is necessary to do a good piece of work after it is once struck.

B.—You were speaking awhile ago of using for partial plates gold instead of rubber. Do you think that gold plates will wear on the teeth more than rubber plates? As a matter of fact, does not rubber injure the teeth around which it is put as much as gold would?

A.—Yes, it would.

F.—Why?

A.—Because it is a nonconductor.

F.—Of heat or what?

F.—Of cold or heat. You seldom see a mouth where a partial rubber plate is put in with or without an air chamber, large or small, but that the gums are reddened and there will be spots beneath the plate, no matter whether it is black, red, or pink rubber, and no matter how well fitting it is.

E.—It is a good protection against heat or cold, and it favors the growth of microorganisms. It serves as an incubator. Gold plates are constantly changing; therefore the fungi cannot grow.

F.—I have seen a typical case of rubber sore mouth under a gold plate.

E.—Was it a clean plate?

F.—It was not a well-fitting plate. The patient came to me saying she had lost a night's sleep, and the ill-fitting plate proved to be the source of her trouble. Treatment consisted in removal of the plate and keeping it out for ten days or two weeks, continuous mouth washes, cleaning the teeth, and then I made a gold plate, replacing it with another one. She has since borne it successfully and comfortably.

A.—Is it not a fact that if you examine a large number of mouths with partial plates, you find the following conditions: Where gold plates have been used, the teeth themselves suffer more from the clasps and the pressure of the metal against the teeth. With the rubber plate it is the periodontal membrane and the alveolar process that suffer, and consequently is not a gold plate better for the patient, because he only suffers loss of tooth substance, than a rubber plate which causes loss of the socket and all that that implies?

B.—I think the general impression prevails that a gold plate attached by clasps is much more injurious, no matter how well the clasp may be fitted, than a rubber plate.

F.—I disagree with you. If you had a mouth in which there was a condition of the secretions which promoted softening of the teeth, which induced a worn condition of the teeth or an abrading surface, then they might be injured greatly by clasps, but in a healthy mouth, in my practice I have seen but little ill effect from a properly fitting clasp.

B.—There is a constant friction of the clasps in taking the plate out, and the better the clasp fits the more you wear the teeth, of course.

F.—If you wish to abrade teeth with clasp metal you have to rub a great many hours before you succeed in affecting the surface.

A.—What is your practice in fitting a clasp?

E.—I fit a clasp to the cutting edge of the grinding surface.

A.—That is a good plan.

E.—I prefer to have it just at the grinding surface and to have a little lug extended to a sulcus on the grinding surface to prevent it from moving up, so that the bearing is on the masticating surface of the tooth.

A.—Is it not a fact that there is a strong tendency to cause decay of the surface of a tooth by the fitting of a rubber clasp?

E.—It is the best way to induce decay, because it is almost impossible to keep a rubber clasp clean. I have never seen one kept clean.

B.—That is correct.

A.—To continue the subject further, as we have discussed partial plates and their retention, what in your judgment is the best permanent plate for an upper or lower edentulous jaw, leaving continuous gum out of the question?

B.—A gold plate with rubber attachments, for the reason that you get the advantages just spoken of as to cleanliness, etc., and the advantage that, in case of breakage or necessity to repair or alter a plate, it can be done readily.

F.—I will amend that by using single teeth rather than gum sections.

A.—The universal custom would be to use single teeth instead of gum sections.

E.—I agree with what has been said entirely.

A.—How about a lower denture?

F.—The same thing.

A.—Is there any advantage in using a metal plate for a lower full denture?

F.—For a hearty, robust person whose muscular system is well developed, it is advisable; but for an elderly person they usually prove burdensome.

E.—They are burdensome, are they?

F.—Yes. Patients complain of the weight.

E.—How about cast aluminum?

F.—There is little to be gained in using cast aluminum.

A.—Would there be difficulty in having the upper plate of gold with rubber attachment and the lower plate of full aluminum with no rubber attachment?

F.—The difficulty would be, that if the mouth was so shaped as to expose the gum in opening it, you expose the metal surface.

A.—Would there be any incompatibility in the two metals in the mouth?

F.—No, sir, in my opinion.

A.—Have you ever made a cast metal plate for the alveolar ridge and then attach the teeth to the plate with rubber?

F.—I think that makes a good combination.

A.—Is not that a better combination than all metal? Does not that do away with the disadvantage of weight?

F.—Yes.

A.—You would not favor the making of the whole upper and the whole lower denture of gold and soldering each individual tooth to the plate?

F.—I did that once when a student. I would not do it again. It is a waste of time and labor.

A.—It is impossible to keep that kind of plate clean.

E.—It is sometimes advisable to make a full upper plate with single teeth, soldering them to the plate.

B.—Each tooth soldered separately?

E.—Yes, using single plate teeth.

F.—And having the plate extend over the alveolar border?

B.—He (E.) means to make an entire plate with single teeth, all soldered on. There would be no rubber about that. That would be for a case where the gums are prominent.

F.—I want to say in regard to partial upper plates of gold, that where the teeth are soldered on, if there are more than two teeth I always vulcanize rubber in around them for the sake of cleanliness.

—*Exit Reporter.*

"CONDUCTIVITY OF HEAT BY FILLING MATERIALS."

By THOS. L. GILMER, M. D., D. D. S., CHICAGO.

In the December REVIEW were presented the results of some experiments to determine the thermic conductivity of filling materials and the method employed to obtain them. At the request of the editor I have made further tests which include tin and artificial dentine.

Artificial dentine is one of the Fletcher preparations, and if I am correctly informed, is an oxysulphate. It is nonirritant and much esteemed by some as a material for capping exposed pulps, and as a foundation under metal fillings in large cavities.

The table given in the December REVIEW exhibiting the results of my experiments is reproduced here with the results from similar tests with tin and artificial dentine.

Gold.....	1000
Lawrence amalgam.....	852.5
Copper amalgam.....	702.7
Tin.....	590
Oxyphosphate Zinc.....	584.27

Oxychloride of Zinc.....	525.25
Artificial Dentine.....	525
Gutta-percha	520

There was also given in the previous article a table of the relative conductivity of metals previous to their being transformed into shape suitable for filling material. This table was the result of tests made by Prof. F. Grace-Calvert and Mr. Richard Johnson in 1860.

As there is a wide difference between the results of their experiments and those of others, I give below tables from three different sources :

CALVERT-JOHNSON.

Silver.....	1000.
Gold.....	981.
Copper rolled.....	845.
“ cast.....	811.
Tin.....	422.
Platinum.....	380.

WIEDEMANN-FRANZ.

Silver.....	1000.
Copper.....	748.
Gold.....	548.
Tin.....	154.
Platinum.....	94.

JOHNSTON-TURNER.

Silver.....	1000.
Copper.....	736.
Gold.....	532.
Tin.....	145.
Platinum.....	84.

In my previous article I should have stated that the zinc preparations were saturated with moisture so far as they could be in a period of 25 to 30 seconds immediately preceding the tests. Tests made with these materials thoroughly dry may give different results; but by moistening them, their condition is rendered more like that, when in the mouth.

MEMORANDA.

Dr. H. A. Douglas, of Kansas City, Mo., is deceased.

Dr. R. A. Holliday is the new editor of the *Southern Dental Journal*.

Dr. W. O. Kulp, of Davenport, Iowa, was a recent visitor to Chicago.

Dr. G. V. I. Brown, of Duluth, paid a flying visit to Chicago recently.

Dr. G. L. Curtis, of Syracuse, N. Y., has removed to New York City.

Dr. L. C. Davenport has been reappointed as a member of the State Board of Minnesota.

Dr. L. B. Smith, of Chicago, a promising young dentist, died recently of typhoid fever.

Dr. Geo. H. McCausey, of Janesville, Wis., has been suffering from an attack of neurasthenia.

Dr. F. O. Sale, formerly of Huron, S. D., has located at 520 63rd Street, Englewood, Chicago.

Dr. J. Y. Crawford, of Nashville, says that crown and bridge work is being done extensively in the South.

Dr. W. D. Miller, of Berlin, Germany, has been elected Professor of Histology in the University of Pennsylvania.

The meeting of the Mississippi Valley Association of Dental Surgeons will be held at Cincinnati, March 8 to 11, 1892.

According to statistics from Switzerland, there were 260 dentists practicing their profession in that Republic in 1891.

The Utah Dental Association was recently organized. Dr. W. H. Bucher, of Salt Lake City, is the Corresponding Secretary.

Drs. Thos. E. Weeks, of Minneapolis, L. G. Noel, of Nashville, and A. H. Thompson, of Topeka, were recent visitors to Chicago.

Do not thrust even the smallest instrument into the contents of an unsterilized root canal. If you do look out for an acute abscess.

The family of the late Dr. C. R. Coffin has issued a fine copper plate likeness of the latter. We thankfully acknowledge the receipt of a copy.

The Hayden Dental Society, of Chicago, meets this evening at 63d and Wright Sts. Dr. W. F. Michaelis reads a paper on "Carbolic Acid."

Dr. G. V. Black says that oil of cassia is one of the best parasitocides that he is acquainted with. It is especially useful in barbers' itch and other cutaneous affections.

The Union Medical Societies of Chicago, have united to give entertainment to foreign medical men who may visit the World's Columbian Exposition in 1893. Dr. Chas. Warrington Earle, is President, and Dr. A. Church, Secretary of the organization.

Dr. E. K. Blair, of Waverly, Ill., the genial whole-souled member of the legislature, has met with the misfortune of having lost his office outfit, books, etc., by the ravages of fire.

Dr. L. C. Ingersoll, of Keokuk, Iowa, delivered a lecture on the "Origin and Development of Written Language" at the Auditorium Recital Hall, in Chicago, Wednesday evening, February 3, 1892.

Dr. Edward C. Kirk, the editor of the *Dental Cosmos*, was a welcome visitor to the World's Fair city this month. He attended the annual dinner of the Odontographic Society on February 8th.

Dr. J. C. Storey, of Dallas, Texas, attended the meetings of the Executive Committee of the World's Columbian Dental Congress. Dr. Storey is booming the *Texas Dental Journal* and the Congress also.

Dr. J. A. Kimball, of 58 W. 26th Street, New York City, is the publisher, proprietor and editor of a new dental journal entitled *The Dentist Himself*. The first number appeared last month. The subscription price is \$1.00 per annum.

Dr. Ames asks what the effect of impregnation of the dentine with metallic salts will be—detrimental or beneficial? For instance, after filling a root with copper amalgam or the adjustment of a How post. What answer? Ours is that it is detrimental.

For some reason unknown, many of the Chicago dentists are sufferers this winter with the "Grippe" and other ailments too numerous to mention. At one time eight well-known dentists were ill at their homes or they had to leave home in order to recuperate.

We have recently seen some specimens of fillings made of a material invented by Dr. W. B. Ames, of Chicago, known as oxyphosphate of copper. The material has qualities that will prove it a valuable adjunct to dentistry, especially for setting crowns and bridges.

Dr. Gilmer says that the best plan of supporting a tooth about to be drilled into, in a case of acute pericementitis, is to mold ordinary modelling compound around it and the adjacent teeth, after adjusting the rubber dam. This will prevent pressure against the inflamed apical tissues.

A recent law of the German Empire prohibits the sale of certain (poisonous) drugs and preparations, except on presentation of a prescription from a *physician, dentist* or veterinary surgeon—in the latter case for the use of animals only. It seems that the Germans do give some recognition to dentists.

The Dental Congress which is to be held at the World's Fair in August of '93 will be highly edifying. For most persons, however, it will not have the vivid interest attaching to the smaller congresses in dentists' offices, in which they themselves have occasionally been conspicuous figures.—*Daily Paper*.

The twelfth annual meeting of the Central Dental Association of Northern New Jersey will be held in Newark, N. J., Monday evening February 15, to be followed by the annual dinner. Drs. W. W. Walker, Louis Jack, N. W. Kingsley, A. H. Brockway, R. Ottolengui, B. F. Luckey and C. W. F. Holbrook will respond to the toasts of the evening.

KANSAS STATE DENTAL ASSOCIATION.

The twenty-first annual meeting of the Kansas State Dental Association will be held at Ft. Scott, April 26, 27, 28 and 29, 1892.

Members of the profession are cordially invited to meet with us.

C. E. ESTERLY, *Secretary*.

The Missouri Dental College is now the Dental Department of the Washington University, St. Louis, Mo. A new building will be erected for the Medical and Dental Departments, to be ready for occupancy by the opening of the session of 1892-1893, and will be one of the best equipped buildings for the purpose in the United States. Eames and Young are the architects, Mr. Will Eames of the firm is a son of Prof. W. H. Eames.

ANOTHER DENTAL SOCIETY FOR CHICAGO.

The "Atkinson Dental Society" was organized in Chicago, February 8, 1892. It is to be composed of young men. Monthly meetings are to be held; a dinner to be followed by the reading of papers, etc. We wish success to this society which completes a half dozen in the enterprising World's Fair City.

HAYDEN DENTAL SOCIETY OF CHICAGO.

At the fourth annual meeting of the Hayden Dental Society, held January 19, 1892, the following officers were elected for the ensuing year: President, J. O. Brown; Vice President, M. B. Rimes; Secretary, Louis Ottofy; Treasurer H. McNeil. On the Board of Directors to serve for three years, A. W. Freeman.

LOUIS OTTOFY, *Secretary*.

COLORADO GOLD.

Few people know the real color of gold, as the metal is seldom seen except heavily alloyed, which renders it redder in color than when in its pure state. The gold found in the Ural mountains is the reddest of all in its natural state; Australian gold is redder than that of California, while gold obtained from the placers is redder than that obtained from quartz. What causes these different colors is one of the mysteries of metallurgy.—*Exchange*.

ODONTOGRAPHIC SOCIETY OF CHICAGO.

Program of essays to be read before the Odontographic Society during 1892. January. (Annual dinner.) Dr. G. V. Black. Subject—The Use of Books. February. Dr. G. W. Haskins. Subject—Disease of the Peridental Membrane.

March. Dr. J. G. Reid. Subject—Gold in Operative Dentistry.

April. Dr. Louis Ottofy. Subject—Statistics on the Removal of Natural Teeth.

May. Dr. P. J. Kester. Subject—Copper Amalgam. Dr. D. M. Gallie. Subject—Plastic Fillings.

June. Dr. L. L. Clifford. Subject—Care of Teeth During Eruptive Period.

September. Dr. E. A. Royce. Subject—Crowns. Dr. F. K. Ream. Subject—Bridgework.

October. Dr. E. MaWhinney. Subject—Disease of the Antrum, and Treatment. Dr. U. G. Poyer. Subject—Care of Deciduous Teeth.

November. Dr. C. E. Meerhoff. Subject—Interproximal Spaces. Dr. R. B. Tuller. Subject—Cervical Border.

December. (Election of officers.) Dr. L. S. Tenney. Subject—Operative Technics.

Officers: President, C. L. Clifford; Vice-President, Geo. J. Dennis; Rec. Sec'y., U. G. Poyer; Cor. Sec'y., T. A. Broadbent; Treas., E. Noyes. Board of Directors: E. L. Clifford, U. G. Poyer, R. B. Tuller, C. E. Bentley, Geo. J. Dennis. Board of Censors: D. C. Bacon, Louis Ottofy, D. M. Gallie.

CINNAMON A DESTROYER OF DISEASE GERMS.

After prolonged research and experiments in Pasteur's laboratory, M. Chamberland is reported to have come to the conclusion that no living germ of disease can resist the antiseptic power of essence of cinnamon for more than a few hours. It destroys microbes as effectively if not as rapidly as corrosive sublimate. Even the scent of it is fatal, and M. Chamberland holds that a decoction of cinnamon ought to be taken freely by persons living in places affected by typhoid or cholera. There is nothing new in all this. In the oldest known medical prescriptions for infectious diseases cinnamon was a prominent ingredient, and it was in great request during the plague of London. There is no reason for doubting that the physicians of those early days were as familiar with its medical properties as with its odor.—*Exchange*.

Chicago must not be outdone. We have a new fad. It is true that the college incorporation business is slack just at the present time and the young practitioners in the poorer districts, whose own *alma mater* is his most bitter competitor has another unpleasant feature of life's perplexities to contend with. It is reported that a firm owning a large general store, made up of departments in which almost anything from a pin to a derrick can be had, and which is about to occupy a building on State street, covering a half block in area and is eight stories high, has decided to open a medical and a dental department. This move will, of course, compel other similar business houses to do likewise. To the weary shopper this will be a great accommodation. Just think of it, how nice, from the shoe department, the crockery, hardware, tinware and soap departments to be able to enter the dental department, restaurant or hair department, without going out on the street! What next?

OBITUARY.

Died at Chicago, January 21, 1892, Dr. D. W. Runkle.

Died at his home in Alpena, Mich., Jan. 21st., Charles Cooper, senior student in American College of Dental Surgery.

Died at her home, No. 24 Lincoln Ave., Chicago, February 10, 1892, Mrs. Mary S. W. Noyes, wife of Dr. Edmund Noyes. The DENTAL REVIEW extends to Dr. Noyes the most heartfelt sympathy.

Died, in Chicago, Jan. 21, 1892, Harold Wescott Morse, of typhoid fever, at the age of twenty-two.

He was a bright, promising member of the senior class '92, American College of Dental Surgery, and his sudden death brings sorrow to many hearts.

We tender our deepest sympathy to his family and classmates in their sad loss. The funeral was held Sunday, Jan. 24, at his home in Naperville, Ill., and largely attended by the students and many friends.

THE DENTAL REVIEW.

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CHICAGO, MARCH 15, 1892.

No. 3.

ORIGINAL COMMUNICATIONS.

SURFACE PROTECTION FOR PLASTIC FILLINGS.

BY G. V. I. BROWN, D.D. S., DULUTH, MINN.

He who runs may read, and safely state as a premise that even the most successful operators (wherever success has not clashed with honesty, and admission of failure thus become impossible) fail by the ordinary methods of filling teeth, to successfully stop in every instance the progress of dental caries and the breaking down of tooth structure.

The search for needed improvement takes us among the fragmentary principles of the theoretical targets of the earnest advocates of the various methods of tooth filling left intact by reason of true merit, after the sweeping fire of their opponents upon the floors of dental conventions, in the pages of dental journals, and left unscathed by the sword of practical experience, whether among the ranks of so-called new departure advocates who boldly proclaimed their motto that "as teeth need saving, gold is the poorest material for the purpose," or the "old guard" who would save nothing that gold could not save, or the third element who hurled into the thick of the fight the gold crown which having been brought forward from the indisputable place to which it rightfully belongs of restoring to roots of teeth the lost or broken down crowns; where it was a boon and a blessing to that less rightful place among teeth with large cavities and perhaps poor structure, but by no means in a broken down condition, until by degrees the average practitioner instead of feeling urged to struggle for that greater degree of excellence which would enable him to attain such perfection in the

manipulation of gold as would widen its range of usefulness in his hands as a filling material, or the necessary instruction to his patients with regard to the care and watchfulness on their part which should render the use of cement more beneficial, has snapped off or ground down the natural crown surfaces, and covered with caps of metal until the result has been such a snapping and grinding, soldering and pounding of bands, and crowns throughout the length and breadth of the land, that the very thought of it must startle the careful observer even as the roll-call of dire results will one day startle the profession.

That there is need of some material other than gold I think is very generally admitted, for while it stands preëminently at the head of the list as of greater general utility in the mouth than any other filling, there is nevertheless a limit to its usefulness which falls far short of the dentists daily requirements.

It is unsightly in the anterior teeth, it is incapable of preserving successfully a large class of teeth which are in too frail a condition for its proper insertion, and I believe that patients unstrung as they frequently are by the depleting influence of modern civilized life, and other causes which tend to deteriorate the healthful condition of the nervous system, but which do not necessarily give such outward evidence as to be considered serious at the time, are often quite unfit to stand the strain of long sitting and painful operations in the mouth, which do undoubtedly overtax the nervous force under such circumstances, and indirectly hasten in many instances more serious after trouble. After all life is too short for needless suffering if by other methods it may be avoided, and at least as good results obtained.

Cement alone will not bear the wearing effect of mastication, and is too treacherous in its wasting away at the cervical border.

Amalgam is not generably admissable in all parts of the mouth by reason of its objectionable color, and is subject to grave suspicion on account of its tendency to shrink.

Gutta-percha so trustworthy as a preservative against destructive influences upon the tooth structure, if unaided by other covering is of very limited general practical usefulness because it wears out too readily in exposed positions.

I do not wish to be understood as bringing forward these forms of inlays, or surface protectors as substitutes in any way for either gold fillings, gold crowns, or even good amalgam fillings in their

rightful places, but only as a suggestion for use in cases when these materials would not fulfill their highest possibilities as under more favorable conditions; a something which may be utilized not to supplant the gold crown, but to occupy a place between, where the best use of fillings end, and the present common necessity for crowns begins, in other words to reduce to the minimum the necessity for such treatment.

While I derive great benefit in my practice from the use of various forms of tooth crowns, especially as attachments for so called bridge work it is my constant endeavor not to place a band of any kind whatever around the neck of a tooth to offer as it must a premium for the advancement of irritating influences in that region, that are so inimical to the healthful condition of the parts immediately surrounding, unless I feel that such a proceeding is warranted by reason of absolute requirement in order to give usefulness that will prove of sufficient benefit to overcome what seems to be a deplorable necessity. Thus I bring forward as a stepping stone to something better substitutes suitable at present to only a limited number of cases, but capable of illimitable enlargement as greater perfection is acquired, and well worthy of the earnest consideration which only can bring the desired result, and having in view the protection of gutta-percha and cement with hard smooth gold, and porcelain, upon proximal surfaces, the preservation of the proximal spaces so important to the cleanliness and the healthfulness of teeth and gums, and with all having next the tooth substance the readily adaptable plastic material, the virtues of which are too well known to need further reference.

The following examples are described from cases in my practice that are still doing good service, many of them having been inserted several years ago.

I frequently have in daily practice incisors from which some portion of the cutting edge has been lost by reason of an accidental blow, caries, erosion, or abrasion, or perhaps it may be necessary to lengthen one or more such teeth to make proper occlusions in lengthening the bite of a whole mouth.

In such cases a porcelain tip made from a plate-tooth, properly selected as to color, ground to fit the edge of the natural tooth in such manner as to give the proper outward appearance, a platinum pin fitted



FIG. I.

to extend up into the roots and attached to the porcelain tips, the palatal surfaces filled in to proper contour with backing, and solder or porcelain body baked upon them, the tooth cavities filled with gutta-percha, and the tips heated and pressed home as illus-

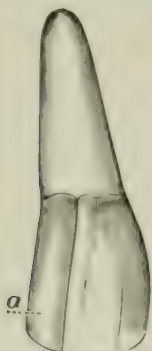


FIG. 2.
a. Tooth and porcelain
corner in place.



FIG. 2
b. Cavity exposed.

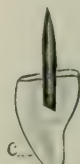


FIG. 2.
c. Pin and porcelain
inner surface.

trated in figure number one, have given me good satisfaction. This I feel to be a conservative operation much to be preferred to cutting off the whole crown down to the roots and crowning by any of the methods usually employed.

I have represented in figure No. 2 *a. b. c.* what has proven of inestimable value to me in the restoration of proximal cavities in the anterior teeth where the destructive process has extended to the cutting edge, especially where the pulp has been devitalized and the remaining tooth structure is so frail as to render the durability of a gold filling questionable. The result may be accomplished either by fitting a pin to extend up into the root and baking



FIG. 3.
a. Front view.



FIG. 3
b. Posterior aspect showing
gold backing.

porcelain body in a matrix of platinum, burnished to fit the cavity and allowing it to extend out to restore the contour, as shown in fig. 2 *c.*, or by grinding a portion of a plate to fit the required space, backing with gold and soldering porcelain, gold and pin together, as shown in fig. 3 *a. b.* The use of a pin gives sufficient security with gutta-percha lining the cavity into which the heated piece is pressed. Many such corners are in good condition still in the mouths of patients who have worn them for several years, and there is no reason I can see why they should not continue to do good service, barring accident, for a long time.

When we undertake to consider cavities upon the labial surfaces of incisor and cuspid teeth extending under the free margin of the gums, I think, that however personal opinions might differ as to the degree of success which each particular operator might claim to have experienced in the durability of his gold fillings in these positions, nearly all will readily acknowledge that gutta-percha could be inserted with much less pain to the patient, and

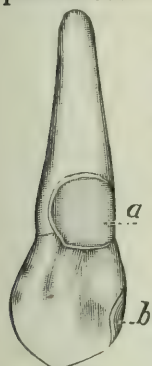


FIG. 4.

- a.* Porcelain with gutta-percha.
- b.* Porcelain and cement.

much less strain upon the operator, that there would be much less danger of a recurrence of decay around the border of the filling by its use than with gold, and when we remove the objection of its rapid wearing out with the rubbing of the toothbrush and other causes, together with its tendency to assume a discolored appearance by covering with a hard, indestructible, natural appearing porcelain surface, either by grinding, or baking porcelain, as in figure 4 *a.*, to fit, and having sufficiently deep undercuts in both porcelain and cavity wall to make it secure with gutta-percha, it does seem to me that we have accomplished something valuable, something at least worth following up and improving.

Such small proximal fillings as shown in fig. 4 *b.*, would of course call for the sort of care only under such circumstances as might in occasional instances for a time at least render the use of gold unavoidable. For example I believe conservative operators favor the use of cement fillings under certain conditions with the intention of keeping watch upon them either with the idea of adding more material as the surface wears down, or replacing with gold later on, when their condition has improved. It has always been my belief that this is the proper thing to do when the gen-

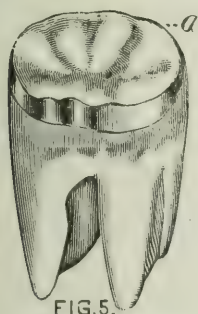
eral health of the patient would probably be better at a later period, as after severe illness, when the vital forces have not had time to return to a normally vigorous condition, with pregnant women, or nursing mothers, or where some specific or other diseased condition renders it necessary and certain that the patient will for a considerable period be obliged to take powerful remedies of known deleterious local effect upon the teeth when taken into the mouth, even though care be exercised in its administration. Often the extreme sensitiveness of the dentine may resist ordinary methods to overcome it, and be so acute that sufficient excavation for the proper insertion of a gold filling would be unendurable. Or in mouths of young patients in whom the tooth structure may be softer than it will be later in life, after the demand for general development and growth has in a measure ceased. Plastic fillings do undoubtedly fill a much needed requirement in such cases, and I am encouraged to assert that they do even more; since having just heard Dr. Heitzman, of New York, assert, that he has now in his possession a tooth which had been filled with cement on one side and amalgam on the other, and which shows that during the six months or more that these fillings had been doing service in the mouth with the pulp alive, and other conditions quite normal, the history of this case being authentic, that a noticeable change had taken place by which there had been a hardening of the dentine around these fillings, proving conclusively to any one who might examine them, the truth of the theory upon which is founded the idea of depending upon such fillings to build up and harden tooth structure, and prepare it for the better protection of gold filling later on. The drawback however, is that cement unprotected, though it may sometimes do service for a considerable period, will soon become hollowed out, leaving disgusting, unsightly looking spaces which form a most annoying place for the lodgment of particles of food, whereas, by covering in the manner described, we have every possible advantage of its use on the tooth substance, protected upon the outer surface and a natural appearance, which, while I have ever studiously kept it in the back ground as being last in importance, compared with other considerations, is nevertheless one that will show itself to be quite important, especially with patients among the fair sex.

Spare imperfect enamel, and spoil the filling is unquestionably true in gold filling, and the conscientious operator must in every in-

stance look first to the permanence of his work, and cut away freely from the edge of the cavity every portion of frail or defective enamel regardless of the vanity of his patient, and if the posterior portion has been destroyed by decay leaving the anterior wall of the tooth intact upon the surface visible to the outward observer its protection and relation becomes at once an object worth trying for.

I agree with the objection usually advanced that a perfect gold filling looks better in a tooth than a porcelain one many times, because of the difficulty of matching the color, and also the line of junction usually visible between the porcelain and enamel of the tooth when the cement shows through, and this is one of the things to study and overcome so far as possible, but to fairly consider the matter one must remember that it is not usually the unsightliness of any particular filling in the mouth that is so objectionable in appearance itself but it is the change in the expression of the mouth given by the lights and shades noticeable in speaking and laughing, and quite as often by small proximal fillings as large ones that have much more to do with the general expression of the whole face than one unfamiliar with thought in the direction would probably readily admit.

Call it art, call it what what you please, but let us bear in mind that our operations upon the anterior teeth govern largely for good or ill the whole facial expression, and that we must look not



a. Gold top in place.
b. Cavity exposed.
c. Gold top with button.

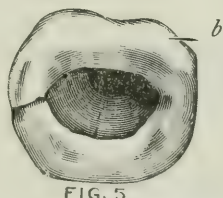


FIG. 5



FIG. 5

Fastening in view.

alone within the limit of the circle of the orbicularis oris, but with broader view study the effect upon the whole region of the face.

Foreigners whose ignorance upon matters pertaining to dentistry we deplore, whose eyes have not become trained to the circle, and

semicircle of black and shining metal upon the white tooth surfaces, speak with surprise and derision of the unsightly and vulgar display of gold in the mouths of Americans, whose wealth and standing entitles the belief that they represent the best effort of our most skillful operators. I am not quite sure but that we may yet find a measure of common sense and good judgment in the bliss of their foreign ignorance.

Some three years ago I treated two molars from which gold crowns (not my own) had to be removed by reason of the discharge about the necks of the teeth, and it was found to be of course impossible to check the pyorrhœa so long as the gold bands extended under the gums and afforded a lodging place for irritating influences. Gold tips were put on as shown in fig. No. 5 *a* of swaged gold plate filled with solder, and a button as in fig. 5 *c* soldered upon the bottom of it, and the teeth restored to a state of usefulness which recent examination gives every reason to expect will continue. There is little possibility of gutta-percha wearing out through to such a narrow line of exposure as exists at the joining of the tooth and gold and there is little or no possibility of dislodging such a broad flat close filling surface.

Many such cases since have all proven very satisfactory.

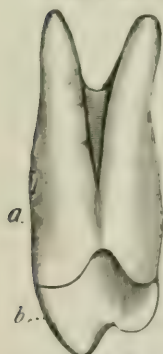


FIG. 6
a. Natural Crown.
b. Top in place.
Made either of gold
or porcelain.

Fig. 6.—Is the counterpart of a bicuspid tooth which having lost part of the crown and both proximal surfaces; these have been restored with the top of a porcelain rubber tooth ground to fit and porcelain body baked around a pin which extends up into the root canals, and baked in the manner of the foregoing cases to fit the concavity of the remaining portion of the natural tooth and at the same time attach firmly the pin and ground top.

This is inserted with gutta-percha, and is more satisfactory to me than the ordinary band crown. If the pulp of such a tooth be alive, and the opportunity for gold filling still questionable I swage a hollow tip of gold plate allow two flaps of gold to extend down to cover the proximal surface, fill the cavity in the tooth with copper amalgam, and press the top into place. Such a top has been doing hard service in a mouth where I lengthened the bite, which made the addition necessary, for two or three years, much better I think

than either a gold or amalgam filling would have done alone. Those three last methods are useful under almost every requirement of an abraded crown and for lengthening the bite with molars and bicuspid.

For large cavities extending beyond the gum line in molars, and for bicuspid where proximal and masticating surfaces may both be involved and the remaining tooth walls not to be depended on, No.

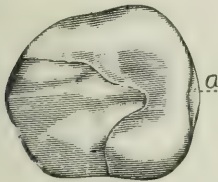


FIG. 7.
a. Tooth with gold inlay
in place.

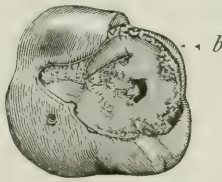


FIG. 7.
b. Tooth showing cavity.



FIG. 7.
c. Inlay with inner
surface and pin in
view.

30 gold plate is swaged to fit the outline of the cavity and also supply the lost contour held in place by a platinum pin or pins that may be allowed to extend up into the root canals if the pulp be dead as in Fig. 7.

Or where this is not practicable, a porcelain piece may be baked to fit the cavity just as was done in the other cases and allowed to extend out to complete the proper outline of the tooth surface, deep grooves may be cut on the sides of the inlay also deep undercuts into the tooth walls which are coated with amalgam, and the porcelain tapped into place with light blows from a mallet.

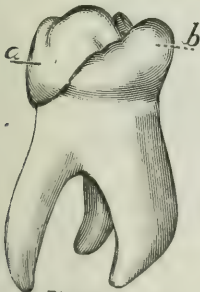


FIG. 8.
a. Porcelain filling.

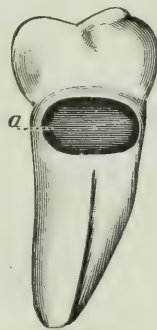


FIG. 9.
b. Inside of gold showing the fastening.



FIG. 9

The excess of mercury is thus squeezed out of it, the danger of shrinkage reduced to a minimum, the contour bolder and sharper

than amalgam alone, and the copper amalgam is left undisturbed to protect and make full use of its antiseptic properties at the margin of the cavity. (See fig. 8.)

Cavities on the labial and buccal surfaces may be quite simply covered as shown in fig. 9, by fitting a little piece of gold plate to the outline of the cavity and holding it in place in the gutta-percha filling with little stays that have been soldered on its inner surface for that purpose. I hardly think it necessary to explain that such a gold covering as shown will protect it from wearing out, nor do I think it necessary to add that it can be easily and quickly made.

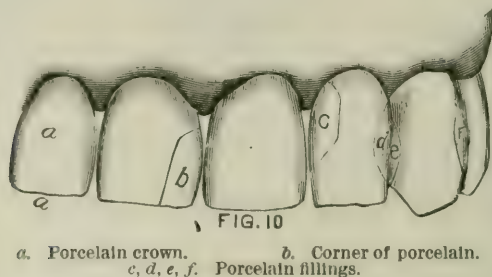


Fig. 10 is a drawing of the front of one of my patient's mouths. These fillings were put in a little more than three years ago. During that period it has been necessary to coat the edges of the cavities with chlora-percha, and hot gutta-percha rubbed well into them, as is my custom whenever the cement shows the least sign of disintegration at the exposed edges. The treatment made such a radical improvement in my patient's appearance when the lips were parted in ordinary conversation that the result has been highly satisfactory to us both, and as there seems to be no reason from recent examination to apprehend that the improvement will not continue to be permanent with occasionally a few minutes' care as described before.

To sum up the whole matter, my experience leads me to believe that these operations are as yet unsuited to those operators whose patients have no certain expectation at the time of an operation that they will ever patronize him again, and is necessarily a failure in the hands of oily gentlemen whose broadcast laudatory circulars treat upon the value of the "ceramic art," known to but few, etc., but is only safe and valuable in the hands of conservative

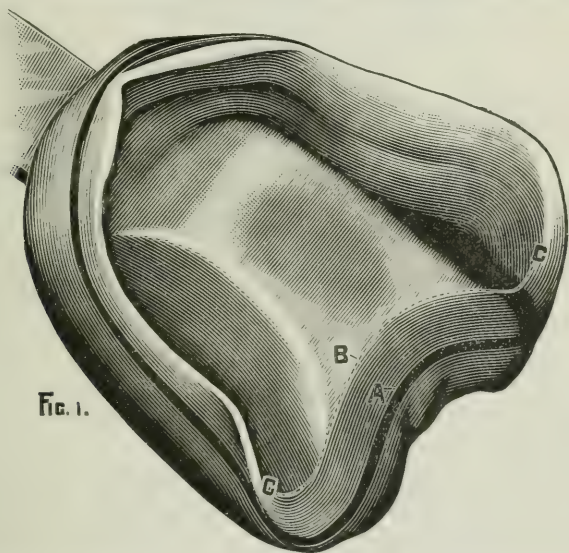
practitioners whose patients have culture, intelligence and the degree of training which makes them appreciate its advantage and also makes the periodical visits to the dentist a matter of religious duty.

RETENTION OF ENTIRE ARTIFICIAL DENTURES.*

BY W. B. AMES, D. D. S., CHICAGO, ILL.

Without entering into a discussion of the principles on which depend the utilization of the pressure of the atmosphere in the retention of entire upper artificial dentures, the accompanying illustrations will aid in a description of a method of taking advantage of this pressure for the purpose.

The necessary condition to be obtained in the adaptation of the denture to the tissues is to have it embrace the alveolar ridge and extend backward upon the palate to an extent that the entire periphery will impinge upon and slightly displace lax soft tissue. This can only be definitely accomplished by securing an accurate impression of the surfaces of these lax soft tissues which calls for an



impression of more of the surface of the mouth than it is ordinarily considered necessary to obtain.

* This article consists practically of extracts from one written in 1885 and published in the *Independent Practitioner* in July of that year.

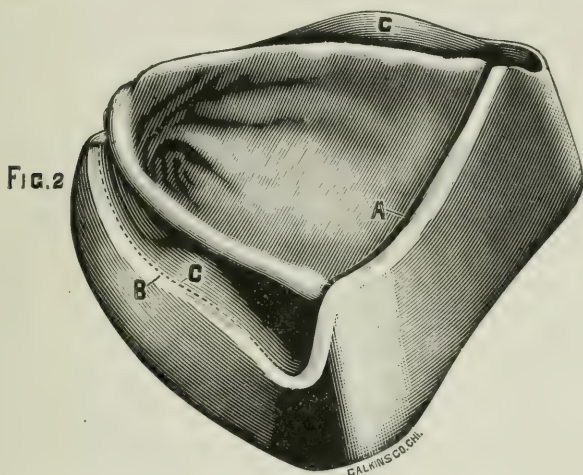
It is important that the impression material should pass upward between the alveolar ridge and the lip and cheeks to the greatest extent possible without putting the lip and cheeks upon more than a slight tension. It must be carried accurately to the extreme height of the space at the outer side of the tuberosity when such a space exists, and it should extend upon the tissue posterior to the tuberosity for a short distance and upon the soft palate for a sufficient distance to allow of locating upon the model the line of attachment of the soft palate to the posterior margin of the hard palate. Such an impression is shown in Fig. 1.

The model obtained from this impression should not be trimmed down closer than to the heavy line A, which model presents all the surfaces to which it is desirable to adapt the denture, while if it was trimmed down to the extent ordinarily practiced a great deal of guesswork would be afterward called for. Such a model allows of molding or swaging the plate so that its entire periphery will be in nice contact with lax soft tissue and give the same retention from atmospheric pressure that is manifested when the attempt is made to remove from the mouth such an impression as has been described. It will be necessary, on removing such a denture, to raise the lip or cheek free of the edge of the plate, admitting air beneath, before the denture can be removed. I have seen the capillaries of healthy tissue ruptured in an attempt to forcibly remove such a denture. The dotted line B, fig. 1, represents the region in which the proper laxity of tissues is found, upon which the posterior edge of the plate should rest. Some slight indentations are always present at the median line of the juncture of the soft and hard palates. These indicate the location of the foramina in the bone through which pass blood vessels and nerves. The posterior edge of the plate should be located slightly posterior to these indentations, so that being slightly upturned it will rest against tissue of the proper laxity but not extend upon the soft palate far enough to cause discomfort.

The posterior edge of the plate should be turned upward slightly by forming it into a groove cut into the *model* on a line corresponding to the dotted line b, fig. 1. This groove should extend from a point posterior to the tuberosity of one side to the same point on the other side, C. C., fig. 1. From these points forward the contact of the cheeks and lip with the rim of the plate will properly exclude air from beneath, if this rim is carried, as it

should be, to the extreme height taken by the impression material at these points.

Fig. 2 represents a model with the groove A across the palate on the line which should be occupied by the posterior edge of the plate in such case. The lateral and anterior margins should be at points indicated by dotted line B, which would give a snug con-



tact with the cheeks and lip. With such a plate, especially in cases of extreme absorption, a great advantage is obtained by having a bearing of the plate upon the horizontal surface of the malar process of the superior maxilla at a point outside of the line of the teeth, placing the fulcrum at such a point that the denture is pressed more firmly against the mouth in mastication instead of there being a tendency to displacement at the opposite side. If the tissues forming the surface of the jaw are uniformly firm, no trimming of the impression or model will be necessary, except as has been described, but if the surface is firm in some regions and soft and flabby in others, it will be necessary to pare the impression at the points corresponding to the hard parts or the model at the points corresponding to the soft parts in order to obtain the ideal condition in which there is an equal bearing upon the palate and alveolar ridge.

In pressing to place a denture built on this plan the air is entirely expelled from between the plate and mucous surface, if the *ideal* has been carried out, and the lax soft tissues at the edges

form a joint that will prevent the air from reëntering when there is pressure applied upon the denture that naturally tends to displace it.

Under ordinary conditions the adhesion of contact is sufficient to support the denture, but when powerful pressure is applied during mastication in such a way that the leverage would tend to displace the plate, there is a *tendency* toward the creation of a vacuum beneath the denture because the air cannot enter from without, and there is a manifestation of atmospheric pressure exactly equal to the force tending to displacement.

If a sufficient force is applied, there is a laceration of the tissues a forcible cupping of blood before the denture will leave its position. The denture is easily removed however by simply raising the lip or cheek sufficiently to admit air between it and the surface of the jaw.

To obtain the utmost satisfaction with a denture built on this plan it is best that it should be dispensed with during sleep, and I often advise the patient to occasionally drop the plate from its position during the day, as this allows the displaced soft tissues at the margins of the plate to settle back to their normal contour. Constant displacement of these tissues will in time defeat the purpose it is intended that they shall serve.

A BRIEF TREATISE ON THE COMMON DISEASES OF THE MAXILLARY SINUS.*

By H. H. SCHUHMAN, D. D. S., CHICAGO, ILL.

(Professor of Oral Surgery at Hahnemann Med. Coll.)

To form a correct idea of the various pathological changes the Antrum of Highmore is liable to, it is necessary to briefly recall to our memory some of the most important anatomical features of the region we intend to dwell upon in this paper.

A first glance at the superior maxillary bone makes it appear to us as a clumsy solid piece of osseous formation; instead of this though, it is a most delicately constructed bone. It contains a large pyramidal hollow, and is composed of a number of processes, so arranged as to close in this large aperture from three sides, leaving in the disarticulated skull the base of the pyramid, which is the outer wall of the nasal cavity, open. Its boundaries and

*Read before the Chicago Dental Society.

thickness of its walls vary greatly, and to form a correct idea of these, it would be necessary to study them on a large number of specimens. The walls of the antrum are, as a rule, quite thin; more especially the orbital plate, also immediately above the canine fossa upon the buccal wall, and between the palatal roots of the upper molars, of course this is the more so in young subjects.

A knowledge of this will explain how it is possible for engorgement of the antrum to bulge out the eye-ball, or how easily at times some of the walls give way to external violence.

In the articulated skull the large opening into the antrum from the nose is almost completely closed by processes of the ethmoid and palate bones, only two small openings being left. One of these, the posterior one, is usually found closed by a fold of mucous membrane, the other, when the parts are in a healthy state, is just about large enough to admit a fine probe. Some operators have used this opening for the introduction of a tube for injecting purposes. But this procedure is far more satisfactory in theory than in practice. Such performance is sometimes made absolutely impossible by the narrowness of the passages, and another reason why I do not think this the best mode of access for treatment, is, that if fluids are injected, they are usually supposed to flow off, and for such a purpose, it seems that the most dependent part of the floor of the cavity should be selected for the operation. In many cases, the maxillary sinus is found to be divided into a number of compartments by bony septi or ridges running across its floor. If free drainage is to be obtained, these complications must of course be removed. This must not be lost sight of, as it frequently makes a cure absolutely impossible.

Quite frequently a number of small projections will be found covering the floor of the antrum. When these thin covers are opened, the apices of molar fangs are found projecting into the cavity; especially common is this with the palatine roots of the second molars, thus associating the lining membrane of the sinus with the covering membrane of the root, and thereby furnishing a contiguity, if not a continuity of structure.

On the posterior walls, you will remember, are the posterior dental canals, transmitting the posterior dental vessels and nerves to the upper posterior teeth. This will show why in some antral diseases the pain is felt often in a number, or possibly just in one particular tooth, such pain being induced both by inflammation

and also by pressure upon these nerves by accumulated solid or liquid matter.

Some diseases of the maxillary sinus may be of a very benign sort, as long as they remain in the incipient stage, but if left uncared for for any length of time, they may become not only disagreeable, but malignant, and defy all skill and knowledge of the practitioner, and the disease only ends when the unfortunate sufferer does. (Cancer). Most antral troubles are benign if properly cared for at the right time, and will usually succumb to proper care very quickly, and without much discomfort to the patient. Here, like in any part of the economy, the gravity of the trouble greatly depends upon the general health and predisposition of the patient. A slight irritation in one robust and strong may start up a slight inflammation, while the same cause in one anæmic and weak or of a scrofulous diathesis for instance might produce an indolent and chronic ulcer. Some patients may carry an antral trouble around weeks, months, or even years, without even noticing it, and in others again the same trouble may extend with such rapidity, that, even if timely, treated it will not succumb, but may even if only a slight inflammation in the beginning, cause caries breaking down of the surrounding structures, and may prove fatal.

As to the diagnosis, some antral troubles are easily diagnosed, others are only recognized by using a great deal of judgment, scrutiny and care.

Since the writing of this paper the electric transluminator has come into use, and if the patient be a young subject where the walls of the antrum are thin and partially cartilaginous, is a fairly good and safe diagnosticator. Tapping though is the best means of diagnosing, and the proper place for this (introduction of a probe or trephine) varies with the case; it may be above the second bicuspid tooth, about an inch above the gum-margin, or in some cases through the canine fossa. In most antral diseases, the danger apprehended arises through neglect on the part of the patient and not from any necessary complicating character of the trouble or predisposition. In forming a *prognosis*, in these cases, the circumstances to be principally considered are the general health of the patient, inflammatory tendencies, and any spreading of the disease.

Usually antral affections, if running on for any length of time, are loathsome and give sufferers great inconvenience. The dis-

charge in some of these diseases is liable to become very foetid, and by having access to the nose is likely to produce a continual feeling of nausea and this by the way is one of the keynotes in diagnosing antrocele, especially in advanced stages. Patients suffering from this trouble very often complain of no appetite in the morning, a disordered stomach, and a feeling of nausea, which is quite easily understood, those fluids having entered the nose and having during sleep trickled down into the œsophagus, and having been swallowed.

Most diseases of the antrum are due directly to dental disturbances. There are many pathological conditions though, connected with this sinus, which are just as likely to occur here, as in any situation on mucous membranes. It is wrong to think that all antral troubles are due originally to dental disturbances; not only do we sometimes find these troubles just reversed in their succession, but quite often affections of the antrum are secondary to nasal troubles. The general sources of morbid conditions in the antrum may be divided into two classes: *First*. By the roots of teeth reaching into it, and *secondly*, by the lining membrane (being affected likewise throughout mucous linings). Troubles derived from the latter cause, do not essentially vary from other mucous affections, modifications being made only by the situation. A cause less often thought of but none the less a very frequent one, is a root fragment left in the alveolus (or in the antrum if it has penetrated its floor), after attempts at extraction. Sometimes you know, roots of teeth penetrate the antral floor and enlarge within, so that to extract them without breaking or without taking along part of the floor, becomes an impossibility, such debris will at times act as foreign bodies, and produce the same deleterious results as foreign substances.

Let us at first consider a diseased condition which is often wrongly termed *abscess* of the antrum, more correctly *antrocele*, it being the commonest of those pathological conditions connected with a liquid accumulation. We have here at first *no suppuration*, but simply an accumulation of *purulent fluid*, the excretion coming from the lining membrane.

The lining membrane of the sinus is liable, as all mucous membranes are (and especially this one, being a continuation of the Schneiderian), to inflammation and alteration in its secretions, both regarding amount and kind. The absorptive power of the lining

membrane in antral diseases, like that of vaginal mucous membrane, in turn becomes greatly impaired, and we therefore have two reasons for the accumulation of fluid, one being the increased excretion, the other the decreased absorptive powers.

The symptoms vary, usually commencing with a feeling of fullness, then a dull aching, throbbing, pulsating pain in the cheek, sometimes accompanied by the usual signs of inflammation, heat and a fullness of the soft parts externally. I believe that too much stress has been laid upon the fact that a purulent discharge from a corresponding nostril *must* be expected in these cases. This opening may close at the very beginning of the trouble, in fact may have been the cause of the deterioration of the enclosed fluid. If the opening be not closed, the patient will notice a (fœtid) discharge in the nostril, most in the evening, when he retires and lets his face rest on the healthy side (as then the fluids, accumulated during the day will run into the nose), or, if he lie on the affected side, the cavity will fill during his rest, and flow over into the nose when he arises. As long as the excretion remains purulent and watery, the disease is *dropsy*, *antrocele* or *empyema*; it might be called *atresia*, when the fluids become thick and degenerate, but *then only*. Should the disease be left to run its own course, the pressure within the cavity increases by the increasing accumulation of fluid, the pain assumes a more throbbing distential character and may become very severe. Still later the same constitutional symptoms arise as are generally present in alveolar abscess, suppuration being ushered in by a chill and fever, followed with a strong, high pulse. As the pressure within increases, the local symptoms become more prominent, the features are liable to become so distorted as to render the patient unrecognizable.

I had a case where the whole zygomatic fossa was expanded and instead of a fossa beneath the zygomatic process there was a fullness and prominence, the molars of the affected side felt elongated, there was acute pericementitis, the concavity of the palate was flattened, the nostril of that side was closed, the floor of the orbit raised and the eyeball considerably displaced. This was a case which had been standing for five months and the walls had become very much atrophied. Antral abscess is liable to impair vision so as to cause permanent amaurosis. Total blindness may result by causing extreme anæmia of the optic nerve. Prof. Holmes says that the inflammation accompanying abscess of the antrum is occa-

sionally so severe as to implicate the periosteum not only to the destruction of some parts of the maxilla, but extending beyond these structures so as to involve the optic and other nerves in their passage from the cranium to their destination in the orbit, producing blindness and fixedness of the pupil on the affected side. These cases are rare, but several of them are on record. The pressure within the antrum may atrophy the walls of the cavity so that they become quite thin and fluctuation or palpation may become a very valuable symptom in diagnosing. The walls then convey a very peculiar sensation to the touch, like the handling of fresh parchment; but to fully insure a correct diagnosis, a sure method of testing the contents of the sinus is exploration. A minute trocar and cannula, not above half the size of a wheaten straw, should be used for this purpose. If the contents be fluid, frequently an ordinary abscess needle will do, but if they be at all thick the matter will not run down the narrow canal of such needles, therefore prefer the trocar introduced either in the anterior wall or above the bicuspid (within the mouth) or between the roots of the first upper molar.

If not attended to the effects of antral abscess or antrocele may be quite serious. Such an abscess may burst into the nose, or, as it is often seen, through the cheek, leaving considerable deformity by gluing the cheek to the bone and leaving a disfiguring scar. (Such a scar may be removed by a plastic operation later on.)

I have seen one case in the Hotel Dieu in Paris, where the pus found its way into the orbit, causing great displacement of the eyeball, and was finally evacuated through a fistulous opening at the inner canthus. Not long ago I finished treating a case for a woman who had been suffering for seven weeks with paralysis of the muscles of expression on the left side; the eyeball was somewhat displaced; she also had slight amaurosis of the left globe. Its muscles were paralyzed and the lachrymal canal closed; the first upper molar and second bicuspid tooth were both elongated and loose. Neuralgic pains were felt in the ear and the zygomatic fossa. The eyeball was very painful through the pressure on the orbital plate from below. Diagnosis of this case was a rather difficult one, the lady suffering at the same time from other constitutional disturbances and the *antranasal opening having closed*. This case shows distinctively how necessary it is to use judgment and care, to form a correct diagnosis; do not always expect to *see a discharge*.

The treatment of antrocele is not a very complicated one, though it may become so, if the disease be left to run its own course for any considerable length of time. I have known cases where the simple extraction of the offending tooth or teeth was all that was required for a permanent and immediate cure. There are two points, which if carried out, I ought to say *properly* carried out, will in nearly every case effect an entire cure. These are "*free drainage*" and "*cleanliness*." No matter how extensive a treatment you may prescribe, these *two* main points *must* be followed with the *utmost* scrutiny, or you will have *no* success. Now the question is, how can both of these be obtained in the antrum of Highmore. The operation is a slight one. General anæsthesia will not often be necessary, unless an external opening should have to be made. Let us first consider the methods of opening the cavity from within the mouth (without perforating the cheek). Suppose the cause to be a diseased tooth, the first molar or second bicuspid should be extracted (judgment to be used in deciding which one. If these teeth are both sound and are not the cause of the trouble then one of the other methods of access are to be followed). After this the floor of the antrum is to be cut out with gouges or drills, the latter instrument used in the dental engines, are probably the ones more generally resorted to. The hæmorrhage will be of a capillary kind. Now there is one thing to be obtained here, and that must be kept in mind, we want *free drainage*, so let us not hesitate to make an opening *large* enough. In most cases the floor should be excavated sufficiently large to admit the end of the little finger. I cannot go into details of the operation, as the time will not permit it. After opening and clearing away all debris and the remains of the fluid enclosed within the sinus, all those bony septi, previously alluded to, should be broken down, not leaving any pockets for foreign matter to accumulate. Another mode of gaining access to the antrum and a very effective one in persons of advanced age or prominent cheek bones is to remove the anterior wall of the cavity, you can very readily make a good sized opening and also save the teeth. Treatment of these cases ought usually to be left to the oral surgeon and dentist as they have the proper instruments and appliances for the proper treatment. I prefer this last mentioned mode of treatment where there is any choice, for several reasons.

The palate may be resorted to to make the opening into the an-

trum, but is only rarely advisable (in special cases.) Sometimes, but rarely, usually only for the removal of solid growths, will it be found necessary to open the antrum from the outside of the face. When this must be done the incision should be made through the soft tissues, corresponding to a line about three-quarters of an inch above the gum margin, opposite the second molar tooth, and the outer antral wall be removed. This procedure will always leave a disfiguring scar, as the muscle fibers have to be cut nearly transversely, and should not be used if at all avoidable. After these steps in the operation, the cavity should be thoroughly cleansed with a $\frac{1}{2500}$ solution of bichloride of mercury. (This will also remove any bad odors.) A piece of gum-elastic catheter, placed on the nozzle of a syringe, will effectually aid in this injecting and prevent the injected fluid from flowing over the surrounding soft tissues. Astringent disinfecting solutions should be used daily. It is to be kept in mind that the very weakest of medicines should be tried first, as very often a constant irritation is kept up by either a too frequent use of drugs, or too much manipulation or too strong medicines.

Remember that as long as *free drainage and cleanliness* are obtained, the two main points have been gained. There has been still another method of tapping the antrum used by several without the removal of any teeth (which I wish to mention), by drilling through the mucous membrane and bone where the cheek and bone meet right above the second bicuspid or first molar. But this mode alone will be found inefficient in most cases, and will generally have to be followed by one of those previously mentioned in order to obtain a cure, as in order to get free drainage, the most *dependent* part of the cavity must be opened. The length of time during which this opening is to be maintained is to be governed of course, by the progress of the individual case. If, to make the opening, a bicuspid is extracted, the opening in the soft tissue may be enlarged by the insertion of a piece of tent-wood for two or three hours. Just a word in regard to a mode of treatment for antrocele much in vogue at present, but which should, in my estimation, be denounced most thoroughly. I am referring to the extraction of a tooth and insertion of a silver tube clasped to the adjoining teeth. I know that some of our recognized oral surgeons resort to this measure still, and I shall expect to be thoroughly reprimanded for this assertion in the discussion, and will therefore tell the reason

why I do not believe in the insertion of a tube, while I have a chance. If a tube is placed in situ it can fill but *one* of *three* conditions. It can be either *too long*, *too short*, or *just right*, and all three are *just wrong*. If the tube is too long it will do the same as those bony spiculæ above spoken of, it will allow a certain amount of fluid to be retained below its opening; if it is too short, the artificial opening in the antral floor will close over it and if it just reaches the antral floor, the mucous membrane will very soon overlay its opening and form a valve through which fluids can be injected but not flow off. Absorbent cotton is very often used to maintain the opening, but iodized lint will be found to be far preferable. (I think it well in our meetings to bring forward these little clinical hints.) Should the lint slip into the antrum it is an easy matter to remove it by catching one end with a pair of tweezers, while, if this should happen to cotton, you will find it embarrassing and tedious to remove it from the cavity.

In a healthy constitution a chronic inflammation in the antral mucous lining may continue for months without any general disturbances or without exceeding its present boundaries, and is often unappreciated, the patient supposing that he has ozæna. To differentiate ozæna from dropsy of the antrum, I think the best diagnosing point lies in the question, whether the discharge be of an offensive odor or not to the patient himself. In the case of ozæna, the odor is very perceptible to the examining physician, but in dropsy of the antrum a close examination may be made, and very frequently no odor will be recognized by the attendant at all, though the patient may complain of a sickening smell. (In these latter cases often after the antrum is opened, horribly smelling pus is evacuated.)

Sometimes it is quite difficult to differentiate between a chronic suppuration and a solid growth; to do away with any doubts in these cases, an explanatory puncture should be made; such a puncture is not dangerous and may save the practitioner from making a great blunder. As to foreign bodies such as bullets, or teeth driven into the antrum by accident, it is unnecessary to say that they cannot be promptly removed and the difficulty treated on ordinary principles.

Time will not permit of dwelling longer on liquid accumulations in the antrum so let us consider a class of tumor forming the connecting link between liquid and solid accumulations. I am refer-

ring to cysts and cystomata. A cyst, as you all know, is a tumor formed by a sack, filled with fluid or a pulpy mass. The symptoms are nearly all local, consisting in a general expansion of the tissue over the antral region, accompanied by a corresponding disfigurement of the features. The original sources may lie in dental irritation, sometimes the cause may be a misplaced tooth. The size some of these growths reach sometimes is quite remarkable. Antral cystoma have been known to reach the size of an ordinary orange. The diagnosis is very much like that of the aforementioned troubles. Fluctuation can sometimes be produced if the cyst is sufficiently large and has caused absorption of the antral walls. If pressure or percussion be applied in such a case, a parchment-like crackling feeling will be noticed by the touch. But to clear away any doubt in the diagnosis exploration with a small trephine will be the surest and safest means. The treatment lies in first opening the cyst and to remove its contents, then to inject it with stimulating lotions. Should the patient be one not very prone to inflammation, the cavity may be packed with absorbent cotton, saturated with tincture of iodine. Several weeks are generally required for a complete cure of these cases, provided the patient has no particularly inflammatory tendencies. Let us now consider some of the solid growths in the antrum. The limited time allowed for these papers obliges me to cut the paper short and I cannot say half of what I should like to on this subject.

Tumors of the upper jaw are of somewhat the same nature, as those in the lower jaw, but their effects are more serious and they cause greater deformity. As you know the most common variety of tumors affecting the upper jaw, are sarcoma, carcinoma and osteoma. (Enchondroma, fibroma and cystoma are comparatively rare.) There are two forms of morbid growths most apt to occur in the antrum, one consisting of a hypertrophied gland or glands undergoing cystical degeneration, and the other allied to tubular epithelioma. The latter is a recurring and doubtless a malignant neoplasm. The signs and symptoms of tumors of the antrum are very much the same as those of the aforementioned troubles. There is no increased discharge from the nose, and no, or at least very little, escape of fluid after tapping. These tumors commencing in the antrum grow into the nose, after expanding the walls of the sinus in all directions, and give rise to singular distortions of the features, obstruct the nasal passages and are often confounded

with nasal polypi. They may also occasion absorption of the walls and protrude into the mouth and into the pharynx or the base of the skull. To remove them, the anterior walls of the antrum will first have to be excised; when possible, this should be done through the mouth, without opening the face, by dissecting the soft parts away from the jaws and cutting the latter away.

Osseous tumors of the jaw occur in two forms, growing either from the surface of the maxilla, or from its cancellous portion. The first may be regarded as an exostosis and have rarely anything to do with the antrum unless their removal should require removal of part of the parietes. A frequent seat for osseous enlargement is seen in the tuberosity of the jaw and may extend to the alveoli, including the floor of the antrum. I should like to cite a few cases in connection with this, but time prevents me from going into details. The origin of tumors of the jaws is generally of an inflammatory sort. Diseased teeth, illfitting plates and sometimes blows upon the face are the most common causes. These tumors are usually of slow growth, are not very irregular on their surface, devoid of pain, and show no tendency to degenerate. They only become serious when their bulk obstructs the nasal passages the mouth or orbit, or interferes with the movement of the jaws.

As long as these tumors are small, but little or no inconvenience is caused by them, and no tendency to grow is present, no surgical interference is necessary. When limited to a portion of the jaw, or when occupying the antrum the removal can be effected by chisels, gouges, bone forceps, pliers, small saws or chain saws. Should the disease have acquired the form of diffused hypertrophy, it will be necessary to extirpate the entire jaw. In all surgical operations on the superior maxillary, the orbital plate should be preserved, if at all possible.

Just a word about cancer originating in the antrum of Highmore. Cancer of the jaw in its beginning is never manifested by any swelling and its growth in the antrum illustrates this fact more particularly; long before any swelling appears the disease will have undermined the maxilla and spread in every direction. Its first sign of life may be (especially in people of advanced age) a severe toothache, for the relief of which a decayed stump or tooth is removed. (I intend to go over this very hastily, dwelling mostly on the early diagnosis of this horrible disease.) From the resulting cavity pus will be discharged and the toothache remain unre-

lieved. If a probe be passed up into the sinus of the antrum a softened mass of dead bone will be clearly felt and may lead the examining surgeon to think he has a case of necrosis ; but if the extracted root be carefully examined a soft growth may be seen attached to it (microscopical examination should in all such suspected cases be made at once and will quickly throw light on the subject), after a time the same fungus mass will grow out of the socket from which the tooth has been removed, or perhaps by that time fistulous openings have already appeared on the hard palate or in the nostrils from which foetid pus is discharged and also through them these fungous masses will be seen to crop out.

It appears that the various symptoms of cancer in the body of the upper jaw conceal their true nature in the beginning and progress insidiously, except by the watchful eye, and are not recognized until they have led to extensive destruction of the bone and perhaps they have formed openings into the cavities of the mouth, nose, orbit and possibly extended even within a few weeks beyond operative relief. Operation even only a few weeks after the first manifestation of the disease will show the bone entirely destroyed and sinuses burrowing into all the neighboring muscles. Under these circumstances it is evident that the most thorough removal of the upper jaw will be totally inadequate to control the disease if it has already advanced to such a state that it can be recognized by external characteristics. Our only safety lies in the very early removal of the entire jaw before the disease has extended to any appreciable extent. To disclose the existence of malignant diseases which so cunningly conceal their presence, it is evidently necessary to examine not only the mouth, but the nose, orbit, and indeed even the throat. The electric transluminator may come in very opportunely in such examinations.

Some antral diseases are due principally to constitutional predisposing causes, such as scorbutus, mercurial stomatitis.

Scorbutic diathesis infers mostly to antral purulency and ulceration. The pathological changes in the maxillary sinus in scorbutic affections are simular to those of the mouth in general. Treatment of such cases have to be of a constitutional kind, locally proper medications may be made with a fine trephine introduced above the canine fossa.

Scurvy and mercurial diathesis both act very similarly by two different methods ; they predispose through their constitutional re-

lations and excite locally by inducing peridental inflammation. In the treatment then we will have to combat the effects of these two predisposing causes. First, the poison must be eliminated from the system ; chloride of potash is a valuable medicine in this direction. Next, the pericementitis is to be cured.

These are the most common affections of the maxillary sinus. There are more and of different treatment and diagnosis. Great care should be taken in diagnosing these affections. Judgment is always a necessary adjunct in the diagnosis of these cases. One cannot depend entirely on what is to be seen, but must, by proper questioning, find out the missing links to the chain of symptoms constituting some particular disease.

MAKING A NAME.

BY GEO. W. WARREN, D. D. S., PHILADELPHIA, PA.*

To relieve pain and add to the comfort and beauty of our fellows, and it may be to prolong their lives, should be a sufficient incentive to the cultivation of any art or profession. This, however, is not usually preëminent in the minds of the young men and women just starting on a professional career. It is for these—the hundreds who have just left or are about to leave our colleges—that I am asked to write.

“How shall I make a name in my chosen vocation?” is the cry that goes up from the crowd of young men who are standing in front of the lower rounds of the ladder ; they are told that there is plenty of room at the top, but how to get there is the ever living question.

First, as a member of a profession, what does the fact of our holding a diploma from a reputable college signify ? In answer I take the liberty to quote from the Rev. Edward Everett Hale, where he says : “Every diploma given in a liberal profession contains three pledges, which those who receive them bind themselves to maintain in accepting—a pledge to learn for all, a pledge to practice for all, and a pledge to teach freely to all. The obligation to learn and teach brings to the front the position of doctor or teacher.”

We must remember, then, the significance of our title, doctor or teacher, one cannot have a grander title, if honorably won, and

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it is he who wears his title best, who fulfills to the highest degree the professional idea, does credit to himself, his profession and his alma mater that rises the highest and makes the best name.

We must remember that college education is but the frame work of the house ; and that it remains for us, by careful study, close observation and increasing skill, to complete and adorn the edifice. Again, we must remember that the possession of knowledge and the power of applying it are two very different things—our greatest orators and most fluent debaters in societies are by no means always the best or most successful practitioners.

For one whose career is just beginning there is no better motto than “perseverance and strict integrity in all things.” From my contact with students I am led to believe that it is the careless, unprofessional habits formed by many that need the first and best attention. It is presumed that you will not place yourself among the quacks and charlatans by placing a showcase or gaudy sign before your door, and make further efforts to deceive the public by advertising prices and your methods of “painless dentistry.”

We will take it that the young man has been fortunate enough to secure a good office outfit and is anxious to start in the right direction, upon an honorable career. Here it is that so many make mistakes that are fatal, at least to their “good name.” Many labor under the mistaken idea that the first thing to do after entering a profession is to imagine they have a change of heart and rush off to join some popular church. Do not use the church for a commercial purpose ; never attend a place of worship for the purpose of gaining or increasing your popularity. I acknowledge that I know successful dentists who, when starting in practice, hired sittings, well to the front, in fashionable churches, and usually managed to attract attention by coming in late. To say the least, it is bad taste. Much better is a practice and much more are you appreciated by patients that are drawn about you by your solid merit, because you have a clear brain, an honest heart and a skillful hand.

In all our work, from the simplest to the most difficult and intricate operation, it is important that we should have before us our ideal, we should have in our mind's eye the different points to be accomplished, and each progressive stage. Our ideals should be real and practical. Should you with increasing practice, grow conscious of any superior aptitude or skill, or above your neighbor-

ing practioner in any essential quality, talent or experience, be not boastful or intrusive; rest assured that your work will stand as a living monument to your skill.

Avoid a multiplicity of callings; to use a familiar term, don't have too many irons in the fire. It is true that after you have established yourself, it is wise to have some diversion; but a man who is part dentist, part politician, and part sportsman is not appreciated by the public. Look around you and see how many such men are successful in life.

Failure comes too, to those who lack earnestness and continued endeavor, and to those who are constantly moving from one locality to another or who are changing from one pursuit to another; being "Jack of all trades" is usually to succeed in none.

To sum up then, let every step of your career be marked by honest and honorable endeavor, by courtesy, truth and justice and not only a good name will be gained but you will enhance your profession in public esteem.

ADDRESS TO THE ODONTOGRAPHIC SOCIETY OF CHICAGO.

BY E. L. CLIFFORD, D.D.S., CHICAGO, ILL.

Fellows of the Odontographic Society of Chicago:—By the decision of a majority of your members you have inflicted upon yourselves for the current year the administration of your humble servant. To-night we gather around the festal board, to retrospect the past, and to lay plans for the future. All the associations of man present of necessity an object to be attained, and these objects, in turn, force upon us a due appreciation of societies.

On the night of December 12, 1887, a few young practitioners, energetic enterprising and ambitious, gathered together and organized "The Odontographic Society." This meeting therefore plants the milepost that is to mark your fourth birthday. While serving that purpose, however, it also suggests the funeral of former years, and tends to remind us that while "Art is long and life is short," it demands a concentration of all our efforts to accomplish even a small amount of results. It is your good fortune and mine to have for ours an age that has seen enormous advance in the sciences on which the fabric of all branches of the healing art rests, such as chemistry and other branches of physics, physiology, pathology, and therapeutics. Each of these has taken giant strides,

and while it is to be lamented that purely medical knowledge has scarcely made proportionate progress, it can, in a measure, be attributed to the fact that medicine deals with the aberrations of the most complex organisms, is of all the sciences the most difficult, and demands the greatest patience, the extremest perseverance and the largest accumulation of data.

In the advancement of dental science, in former years, much has been attained, and chiefly by individual effort. The value of such work in the past we would not underrate, nor is it our desire to lessen the amount of it in the future. But in all departments of medicine there is much that defies interpretation from individual experience, and many problems so far-reaching in an ever widening field, with elements so manifold, that no single man, however gifted and long lived, can hope to bring the whole within his range. The need, therefore in dentistry, of that combination of individual work which is adopted in many other branches of science and in commerce, and to which increased facilities of intercommunication have given so much impulse and so much strength, cannot be questioned. Indeed, we fully appreciate, that, resting on individual research alone, dental knowledge can be advanced but slowly and with difficulty. Future progress to any great extent must be the work, not of units acting disconnectedly, but of the collective force of many acting as one. For many to act as one organization is needed, and there is little doubt but that the motives herein outlined, represent the impulses that stimulated the Alumni of the Chicago College of Dental Surgery to father your construction. Though only an infant, in a large and growing family, already your voice has been heard, your influence has been felt. Your monthly gatherings have been marked by no spirit of contest, the anxieties and responsibilities of professional politics find no place in your exercises, no offensive attitude is assumed, and no defensive posture is necessary; no pretention; no vain glorious parade. "A little company of fellow workmen, you meet in the lengthening shadows on the highway, to encourage, interest and instruct one another, to speak words of sympathy, and then, each lifting his burden to move on."

The past is gone; the record, whatever it may be is yours, and you cannot shift the responsibility of the burden. At your annual meetings however, 'tis fitting to take counsel of the past, rectify its errors and purify its practices, let the light stream in upon its frail-

ties and its faults, criticise yourselves that in future you may stand even upon a higher plane. The future is unexplored, and no man can say it belongs to him. But the present, *it is ours*, ours to improve or destroy. Yes to us belongs the glorious nineteenth century and the onward march of civilization is upward and toward the light. In every department of industry a constant change is going on, nourished and encouraged by the wholesome desire to improve present conditions, not alone for the pecuniary gain, but for the higher, nobler, and more enduring results of intelligent advancement. Shall our selfishness, indolence or greed blind us to the fact recognized by all other vocations, that no elevating advancement can be made by solemnly following precedents founded on reasons or necessities which have no place in the business of to-day? There never has been a period in the history of our calling when the field for active, splendid progress has been more inviting and encouraging than the one in which we live. Let every member catch the inspiration and realize that to the extent of his opportunities and capabilities he is a real factor in the achievements of this restless age and charged with great and serious responsibilities.

Be eager to perform your portion of the uncompleted task and you will glory in the consciousness that life is worth the living. Now then what are the demands of the present? Brevity at this time is forced upon us, but I trust comprehensiveness and completeness may not suffer from the fact. In order to embrace all within one general assertion perhaps we can do no better than to claim as an answer better and higher education. Such an education as will justify us in the claim of standing within the ranks of a learned and scientific profession. Such an education as will allow us, in this intelligent age, to cast empiricism to the winds, remembering always that a superficially educated man is a weak man, and a self-confused empiric. The strong element in any vocation is the thoroughly qualified man, who by self-sacrifice, persistent study, and proper training, has mastered the fundamental principles of his calling. At this time we would not detract from the value of practical teaching, but we would enter a plea for the scientific, in our course. And we embrace this opportunity for entering such a plea because pure abstract science is ennobling and elevating in its influence and is the basis of all knowledge and practice. Yes, it is culture that lifts men and ennobles their souls.

In this materialistic age it forces their thoughts high and above the things that are earthly, above the mere monied value of life and enables them to appreciate and long for the things that are heavenly. We think that at this day no man will doubt but that the persistent efforts of the bright lights that have gone before, in the line of pure scientific investigation and study have pushed upward our professional status, and given us the advancement we have attained. For still further advancement and higher standing the young men in our midst must take up the work where the older ones have left it. To do this there is no better way than attention to your Societies. Let it be your maxim to always attend if possible, and when here to attend strictly to the business of the meeting. Come with a purpose, come to hear all that is said, and cultivate the habit of so preparing yourselves for the discussion of the subject appearing upon your invitation that your contribution to our evening's meeting may accomplish some good. Above all things, do not disappoint your society if it is your turn to interest them; this is always discouraging both to the officers and the members, and has the tendency of looking disrespectful. If it is absolutely necessary for you to be absent at such a time, it is indeed not asking too much of you to notify the proper officer in due time that further entertainment may be provided. Do not fear to "speak in meeting." Even though it be a report of your failures, you do not stand alone, we all have them, and can sympathize with you, and your report may save some fellow mortal pain and suffering and some fellow practitioner chagrin. Do not fear either of making mistakes. Erroneous remarks many, many times lead to valuable discussions, and one error or failure may make a more lasting impression, and benefit us more than many successes. Remember there is also a vast difference between discussions or criticisms and dissensions—the two former should be fully encouraged, the latter never permitted.

It has been stated at one of our recent professional gatherings that it was within the power of the dental specialty to add years to man's allotted time. This statement has given rise to a new line of thought, possibly to many of you, and the more we reflect upon the subject the more logical it seems. The more light that science and investigation throws upon the etiology of many of man's infirmities and misfortunes, the more value we are compelled to place upon the condition of the oral cavity—as a factor in the cause.

And with Dr. Foster who wrote so forcibly, some years ago, we must claim that the portion of the organism intrusted to our care plays a part second to no other portion of the mysterious composition of man. He says, "For whether its labors be in the line of the great miracle of digestion, in the addition of beauty to the face, in the varied and subtle expressions of the emotion, or in the glories of speech: in all these and many more, the oral cavity and its external guardians, the lips, the dental armature within, the tongue, with its vocal and dental adjuncts, are all rich in the vast and accumulated experience of the human race, and they still point to an untold product in the harvest of man's progressive future. Should we therefore aspire to the care of this portion of man's Anatomy, remember it is within the walls of our society rooms, that the possibilities of our calling become manifest.

To place ourselves in a position to add fact to the above sentiment, hard work and close application becomes a necessity. To obtain and be possessed of the education required, reminds us of the value of books and their proper use. The presentation of this thought, we leave to our essayist for the evening.

LINGUAL ULCERATION OF AN EPITHELIOMATOUS APPEARANCE DUE
TO AN UPPER FULL ARTIFICIAL DENTURE.

BY ARTHUR C. HUGENSCHMIDT, M. D., D. D. S., PARIS, FRANCE.

The dental specialist is often called upon to give his opinion in regard to an ulceration of the tongue, especially as such lesions very often are due to or arise from some defects in the dental apparatus.

That the diagnosis arrived at should be a clear one, is easily understandable, as on it depends a severe surgical operation, namely: the removal of part or the whole of the tongue if the settled diagnosis be epithelioma. Many a patient, I am convinced, has had his tongue removed for lingual epithelioma, when if a dental specialist had been called in he might have found the origin of the trouble, and by removing it, cured the ulcerative process, and saved to the patient a very valuable organ.

To such cases belong the following case, which came under our care: In 1888, a lady about sixty years of age presented herself for our consultation suffering from a very marked lingual ulceration situated on the dorsal aspect of the tongue. This ulceration had

been diagnosticated by an eminent European surgeon as lingual epithelioma, who recommended the immediate amputation of the left half of the tongue, which was to be performed two days later.

As soon as I examined the tongue, I was convinced from the physical appearance of the lesion that I had to deal with an epithelioma. Moreover the patient complained of very severe local pains of a lancinating character, with difficulty of speech and mastication. The lingual pains were increased by certain highly seasoned food, while, as regards the articulation of words, it was embarrassed, obscure and very much resembled the uncertainty, the false steps, so to speak, of the tongue, which are observed in the first stage of general paralysis.

The tongue was very voluminous, of a deep red or violet hue. On examination of the lesion, I found at about the middle third of that organ, on the left dorsal aspect, a transverse ulceration which started from the left border, directing itself toward the median line and perpendicular to it.

This ulceration was nearly an inch long and formed a hollow, a cavity in the lingual tissue, of more than one-third of an inch deep. The posterior border of the wound formed a projection which falling forward covered the cavity. Lifting up this projection one exposed a vast crater-like ulceration, being one-half an inch broad, the bottom of which was covered with large granulations, surrounded by pus and bleeding very readily. The periphery of this ulceration was indurated. The submaxillary glands on the diseased side were taken; everything in a word in the clinical aspect pointed to epithelioma.

On examination of the dental arches, I found the following conditions: The lower maxillary presented only the four incisors and the right canine, all the other teeth had been replaced by a partial lower set which fitted very nicely, and which in no way came in contact with the ulceration.

At the upper maxillary all the teeth had been replaced by a full suction plate, which seemed to keep well in place; no irregularity existed on either of those artificial pieces, which were both well finished.

Continuing to question our patient, I saw her suddenly in answering, perform a rather awkward movement of deglutition. I suddenly told her to keep quiet and not move, and on opening the mouth slowly, I found the *posterior palatal border* of the *upper full*

set caught in the ulceration, between the posterior projection of the ulceration and its anterior border; this apparatus seemed to be well in place when the patient had her mouth open, but as soon as she articulated, the movements of the palate, which attend such an act, detached the prosthetic piece and by an instinctive movement by which the dorsal aspect of the tongue raised itself, the plate was replaced in its ordinary position.

This displacement of an *upper* piece rarely causes an ulceration of the tongue, and in this case it was the unique cause of this ulceration which began six months previously by a little sensitive point which had been cauterized for some time, with nitrate of silver, and finally abandoned until the day when the lesion becoming very extensive, the patient addressed herself to an eminent surgeon for relief, who gave the advice mentioned above.

Needless to add, the cause of the trouble being found, that the treatment was highly successful; all that was done was removal of the artificial piece; rinsing the mouth with an antiseptic solution, carbolic acid two per cent; the ulceration touched with tincture of iodine and finally in two weeks the patient was cured and has remained so up to date.

PROCEEDINGS OF SOCIETIES.

CHICAGO DENTAL SOCIETY.

Regular meeting, February 2, 1892, Dr. D. M. Cattell, President, in the chair.

Dr. H. H. Schuhmann read a paper entitled "Diseases of the Antrum."

Dr. T. W. Brophy, in opening the discussion said: I did not suppose that I should be called upon to open the discussion on this paper. I am very glad I had the opportunity of hearing it this evening. Dr. Schuhmann deserves a great deal of credit for the labor expended in the preparation of this elaborate paper. I do not know that I can adversely criticise anything that he has said. I feel like our lamented Atkinson, who, when he arose to discuss a paper, would sometimes say, "I agree with everything the essayist has said except what I mention." One special feature of the paper that should be commended is the fact that the essayist has

kept constantly in mind and has urged the necessity of thorough antiseptic cleanliness from the beginning to the end, without which it would be almost impossible to cure disease of the antrum. I have here some photographs of the antrum which I picked up in coming down to this meeting this evening, and they will show some of the anatomical peculiarities that were mentioned by the essayist, especially the bone septum which we often find in the antrum separating the cavity into various cavities. One of these photographs will show very nicely just at the lateral third of the antral cavity upon the right side a distinct separation. The author of the paper has well said that it is sometimes difficult to make a diagnosis and to treat these cases well without breaking down the bone septum which separates the cavity into different parts. For instance, an operator may diagnose, as he thinks, disease of the antrum either by the presence of serous fluid or pus in the antral cavity. He may open the cavity and find it apparently in a healthy condition, and yet everything in the case indicates that he has an abscess. Further exploration will develop this anatomical peculiarity which is overlooked, the presence of the bone septum separating the cavity into two or three parts. I have seen cases where there were as many as eight distinct cavities formed, where there were little cavities running out into the malar process, distinctly formed, and separated from each other, so that in case fluid formed in one we might make several explorations before coming in contact with it.

With regard to the question of drainage tubes and their use, I do not agree with the essayist, because in my opinion the advantage of a drainage tube is to secure continuous drainage. If a large opening be made, which is the proper thing to do just as he has described, making it as large as possible so as to introduce even the end of the finger, such an opening will give good drainage generally. The drainage tube must be just right, it must be neither too long nor too short. How can we determine the proper length of the tube? That is a simple thing to do. If an operator takes a silver probe and bends its end so as to form a right angle, then introduce it into the antrum, he may hook it on the floor of the antrum, and by that means measure the distance between the floor of the antrum and the masticating surfaces of the teeth, thus indicating the length of the tube. He may then take platinum and make a tube the right length. He should make a band in the

manner we would proceed to make a band for a crown and fit it to the tooth in close proximity to the opening or antral tube.

He can then take an impression with moulding compound of the tube, and the band around the tooth, seeing that he holds the tube where it ought to be. In taking that impression he removes the tube and also the band from the tooth and makes a plaster cast surrounding them. He takes the cast to the laboratory, he puts platinum between the tube and band and solders the two together, after which he adjusts the tube to the antrum, cementing the band to the tooth. He can drain the cavity at the most dependent part, which is at its floor. He has continuous drainage. That is the essential feature of the treatment of antral disease. When the patient is taking his food he may plug the end with a little stopper, and this may prevent the introduction of food into the antrum. After meals he takes out the plug and gets continuous drainage. It seems to me that this opening might be plugged with gauze, wax or anything else. Wax is clean, and I would not hesitate to use it. It will not absorb anything. I would use it in many cases about the mouth where I wanted to secure a wide opening, and to aid nature in filling in the cavity at its base with granulations, as, for instance, in cases of necrosis or carious bone. After the removal of the diseased bone the wax may be introduced after the cavity has been antiseptically cleansed, and by shaving off a little of the wax, from time to time the granulations will fill the cavity and the patient will get well.

There is one point of interest that the Doctor in his paper dwelt upon, and that is the use of irrigation. Irrigation is very essential, and after it I think one of the most valuable means of treating these cases is to make use of insufflations of powders, and there is nothing that serves me better than powdered boracic acid. That is my favorite remedy in these cases. An application that is especially desirable in all chronic inflammations of the mucous surface, attended with a low form of vitality and suppuration, is a solution of nitrate of silver in about one part to five thousand, enough to stimulate and bring about a healthy condition of the parts. Here we have a surface that is secreting pus. We first open the antrum and get rid of as much pus as we can by draining it, then we wash out the cavity with some warm carbolized water or any other weak solution, but do not use peroxide of hydrogen in a case like that at first.

I saw a patient a day or two ago in whose case peroxide of hydrogen was injected in such a cavity as we are speaking about. The patient called upon one of our practitioners, and he found what he supposed was a chronic abscess where a tooth had been extracted. He filled a rubber syringe with peroxide of hydrogen and carried it up into the socket of a bicuspid tooth, and let the fluid go. The patient told me that he thought he was going to lose his head. I said, What do you mean? "I really thought my head would burst." The peroxide of hydrogen entered the antral cavity which was half filled with pus, and you know what the result would be in such a case. The dentist did not observe the precaution of thoroughly irrigating the cavity with carbolized water or even warm water. He should have cleaned out the greater quantity of the pus, and then he could have made use of the peroxide of hydrogen and removed the little remnants on the mucous wall which the carbolized water would not remove. He would then have the cavity in shape to use boracic acid or whatever he wished. I would put boracic acid crystals in there, let them lie so as to get the prolonged action of the antiseptic. The crystals would dissolve slowly and would serve our purposes better than any fluid.

The doctor's paper was a most excellent one. He dwelt upon the subject of tumors, cysts, and various affections of that sort with reference to the antrum. I had occasion to-day (Feb. 2nd) to remove a dentigerous cyst of the lower jaw extending from the angle of the jaw around to the point corresponding to the position of the lateral incisor tooth. The bone was so thin that it could be broken with my thumb and finger. The walls of the bone were exceedingly thin. I cite this case briefly, simply to show what immense destruction may occur in the presence of fluid which forms about malposed teeth, forming the nuclei of dentigerous cysts. We have the walls of the maxillary bones absorbed until they are as thin in places as parchment paper. Fluctuation could be distinctly felt in this case on the border of the jaw, due to the fluid accumulated around a malposed second bicuspid tooth over which was still remaining the second deciduous molar. If I may be permitted to digress from the subject a little, I will say that this case shows the importance of removing deciduous teeth at the proper time. This boy was seventeen years of age, and still the deciduous teeth were present.

DR. I. A. FREEMAN: I would like to ask Dr. Brophy how he

would hold a drainage tube in position when the teeth are not there ?

DR. BROPHY: Usually we have teeth in these cases. I would make an opening large enough to secure drainage without a tube. I had a case a little while ago in which there were no teeth; the gentleman who was treating the case made a tube and put it in a rubber plate, and that was a perpetual inconvenience to the patient, the movement of the plate, which always occurs more or less, kept up irritation of the surrounding tissues. I would do it in this way: I take a large bur—I have some made for the purpose about four or five times as large as the largest burs used for excavating the cavities in teeth, and make an opening as large as my finger. By this means I secured continuous drainage and the antrum was soon cured. This tube fixed to the plate was objectionable because it caused more irritation than the patient could endure. A patient may wear a plate without much trouble; the secretions will find their way down and out. I do not think it is advisable ever to put a tube in a plate where the teeth are all out, as tubes thus attached are certain to produce a good deal of inflammation of the surrounding tissues.

DR. LOUIS OTTOFY: If the fluid you have injected comes out from the opening through the nostrils, would that be a sufficient indication that the antrum has been injected ?

DR. BROPHY: Generally it would. The opening between the antrum and the nose is situated almost at the summit of the antrum near the orbital plate. If you succeed in carrying the fluid up gently you can irrigate the antral cavity.

I want to say in this connection that I use a large syringe for this purpose. The syringe I use in these cases holds about four ounces of fluid. One of the important points in irrigation of the antrum is to use a large quantity of fluid, keeping the stream constantly running and thus washing out the cavity. If you keep the stream flowing gently it irrigates the cavity thoroughly and rids it of the fluids that may be there. I have a friend who endeavors to treat antral disease in cases where the teeth are present by breaking down the naso-antral wall. I think this practice is objectionable. I have seen one or two cases where there were thick incrustations of the nasal mucus in the antrum and the incrustations formed there will keep up the inflammation and rather aggravate the condition. I would rather make the operation of Christopher

Heath, which is also objectionable, that is to make an opening through the canine fossa. If we take a barrel, filled with fluid, put it on its end, and then take the plug out of the bung-hole it will drain the barrel down as far as the bung-hole, but will not drain it. This is what occurs when we open the antrum at any other place than its base. Ninety per cent of the cases of antral disease are due to abscesses of the teeth, and if we succeed in removing the pus which finds its way into the antrum from alveolar abscesses and keeping the cavity antiseptically clean, we can speedily cure the antral disease. The pus from alveolar abscesses making its way into the antrum establishes inflammation of the mucous membrane of the antrum, consequently disease of the antrum is a secondary condition. First we have abscess with all the preceding pathological changes, and then the antrum becomes involved to an extent which may lead to extensive caries or necrosis of the bones which form the antral wall. Should the bones become diseased, treatment for the removal of the dead tissue must be employed.

GEORGE L. MORGANTHAU, M. D. (as guest): Permit me to say a few words in regard to the paper that has just been read, from a rhinologist's point of view. Firstly in regard to the etiology. Diseases of the teeth very often affect the antrum, but I have also found that troubles of the antrum cause diseases of the teeth. Diseases of the antrum may be due to nasal catarrh; they may follow typhoid fever; the exanthematous diseases. You, gentlemen, as dentists, know much better than I how, when suppuration of the antrum takes place, it can affect the teeth.

Injections through the natural opening of the antrum are made frequently in Berlin. The objections of my friend, Dr. Schuhmann are theoretical. These injections can be practiced often when the patient objects to a bloody operation. It is also good means in aiding diagnosis, and I think it is very valuable. Unilateral purulent discharge from the nose, however, which cannot be ascribed to any other cause, is valued very highly by rhinologists as a diagnostic aid. Transillumination is used in Prof. Fränkel's throat clinic in Berlin. It should not be neglected in doubtful cases. A rather powerful little lamp is necessary. I use one of 6 volts. That can be employed in adults with just as good results as in young persons. We sometimes make an exploratory opening, but preferably through the lower meatus of the nose. The instrument is insinuated between the lower turbinated body and floor of the nose.

By aspiration some fluid is drawn. As soon as the diagnosis is confirmed a trocar is inserted. This is Krause's dry treatment. The antral cavity is washed out and then a great deal of air is blown through. In Germany the antral cavity is flushed by the use of a Davidson's syringe, flushed continually for five to ten minutes, then air is blown through and powder insufflated. Boric acid being hardly sufficiently strong enough, iodoform is used. If its odor is objectionable, sulphonal or pyoktanin may be employed. Judging from my experience, iodoform is the best. Küster, formerly of Berlin, recommends an opening through the facial wall of the antrum large enough to introduce the little finger. We are thus enabled to explore the whole field, remove any obstructions, etc. I have seen cases in which the mucous membrane, seen through this opening, appeared as a gelatinous mass, swollen to many times its natural thickness. It may be necessary to scrape the mucous membrane well with the sharp spoon. Finally the whole cavity should be packed with iodoform gauze.

DR. T. W. BROPHY: In regard to the method of treatment referred to by the last gentleman (Dr. Morganthau), I will say that I have been a close observer of the treatment of a friend of mine who has a great many cases of diseases of the nose and air passages, and it seems to me that the mucus from the Schneiderian membrane accumulates in the cavity, and the method is in my opinion objectionable because of the incrustations formed therein. I do not see how they can accomplish as perfect drainage by the means outlined as by the method I have mentioned—opening at the base. Let us consider for a moment the structure of the antrum. For instance, we have at about the position of the first molar the most dependent part. I am not an artist, consequently I cannot make a drawing which would illustrate what I desire. The cavity is in the form of a pyramid, with the base toward the nose and the apex toward the malar process, and then dropping down so as to form something of a V-shape with the sharp angle of the V downward. You get that usually about the position of the first molar, and in cases where the teeth are responsible for the trouble, and owing to the fact that the first molars are the first to decay largely, in the greater per cent of cases the molar is responsible for the antral disease, and therefore it is the one which we would naturally select to remove in order to secure the best drainage of the antral cavity. By re-

moving that tooth, increasing the size of the opening of the roots we can introduce a large tube and secure good drainage. I regard it as impossible to secure efficient drainage at the other points named. I regard the opening through the alveolar processes far more efficient than the nasal opening; besides it gives the operator easier access to the antrum in order to treat it. It seems the use of warm air after irrigating the cavity would be advantageous before making use of powders. The points made by the gentleman in regard to diagnosis are well taken. It has been my custom where I am in doubt to put the patient at night on the affected side, then direct him if possible, to keep that position until morning, and suddenly turn to the healthy side. If the naso-antral opening be not closed, the fluid will be evacuated into the nasal passages, and it will pass into the pharynx when the fluid escapes unless the patient leans his head forward. I can generally make a diagnosis by getting the patient to follow directions without the use of an exploring needle.

DR. G. V. BLACK: I do not feel like saying much on this subject, though I should not have been here to-night were I not interested in it, and particularly am I interested in seeing our young men bring out papers upon such subjects as this. I was much gratified to hear a paper of this character and scope introduced by one of the younger members of the profession. I am glad to see our younger men coming forward in this work. I have no criticism to offer on the paper. I have listened to it with interest all the way through, from first to last. I have had considerable observation and experience in diseases of the antrum. Antral troubles are of three sorts—first; the most frequent are those derived from tooth troubles; second, engorgements that come from irritations of the mucous membrane from cold and various causes; third, tumors, or diseases that happen to be located in this region, but not growing on account of the anatomical forms here. I have seen all of these varieties, and of course they will assume great variety of form. The last case I examined, which was only a few days before leaving home, proved to be epithelioma, not originating within the antrum however, but extending to the antrum. It was a rather singular case. It seems to have originated upon the cheek and had penetrated the masseter muscle, causing ankylosis of the jaw, and it was on this account that I was called to see the case. There was sufficient contraction of the muscles to close the mouth perma-

nently. I found a large opening into the antrum about the position of the wisdom tooth.

I will say a word in regard to the use of the drainage tube. I feel that in what the essayist has said he is about right concerning the use of drainage tubes, and yet I have a patient now with a tube in the antrum. I put that tube in for the purpose of closing the opening, not to keep it open. The granulations which occur about the end of the tube that do not pass fully through will affect the closure. I do not want continuous, but rather periodical drainage in these cases. I want it closed all the time except when it is under my immediate observation. If it is to be open at all I want to be there. I do not want saliva to enter the cavity at all, The mucous membrane of the antrum is always infected if we allow saliva to pass in. It is infected through the nasal opening sometimes, but less extensively and injuriously, it appears, than by the saliva. It is possible to keep the mucous membrane of the antrum free from suppuration for any length of time, provided we do not allow saliva to enter. Irritation by the saliva constitutes a very radical objection to the opening from the mouth in the treatment of the antrum, and if I could find another point otherwise as good, I should prefer to use it and avoid opening from the mouth. An opening from the nasal passage is better in some respects although we as dentists might object to it. The mucus from the nostrils might give some trouble. It is perfectly justifiable for those who are skilled in the treatment of the nasal cavity to use this kind of an opening. During the day there would not be perfect drainage. I would not have continuous drainage, and it is easy to get drainage when you handle cases with this kind of an opening. When I introduce a tube I plug it, and open it only when I am handling the case. As a matter of fact, I find little difficulty in the treatment of antrum cases. I have had one or two cases, it is true, that did not do well, that is, pus would recur though they might seem well for a considerable time. But those cases have been rare.

I have a case on hand now where I removed a polypus from the antrum which seemed to have grown from a little spicula of necrosed bone left after the removal of a tooth. To remove the polypus, it was necessary to make a large opening, so that I could introduce my finger into the antrum, and there is trouble in getting it to close. I do not like the idea of making a large opening, for I have several times had difficulty in getting it to close. We

are sometimes obliged to make a plastic operation for its closure.

I have, of late years, used different medication from that stated this evening, and my experience in the use of it gives me still greater confidence every year. In the case last mentioned, in which I removed a mass of semisoft material, filling the antrum and producing a great deal of pressure, there was never any pus after the operation, and never any foul smell. After the removal of the growth or diseased part, I irrigated the antral cavity with a weak emulsion of the oil of cassia in warm water. It is not necessary really to have more than a solution to effect thorough disinfection. I use a single tube with a large bulb as a syringe, often using three or four bulbfuls in an irrigation. Then after draining, close the opening from the mouth. If you have not a tube in place you can use the wax plugs of which the essayist has spoken. This medication acts kindly upon mucous membranes, much more so than it does upon the skin. It is not so liable to blister the mucous membrane as it is to blister the skin. If the oil of cassia is used too vigorously, it is an irritant, but not so much so as some of the articles mentioned, and it seems to me it is a much more effective antiseptic than anything else we have used in such positions. It is much more effective in such positions than bichloride of mercury. Some of our German friends have condemned the oil of cassia without giving it anything like a fair trial in actual work.

DR. J. G. REID: I do not readily understand how saliva can enter the antrum on account of its situation, unless by capillary attraction.

DR. BLACK: When you have a hole into the antrum from the mouth the saliva will enter through it. A patient may take water into his mouth and force it through the antrum and nostrils. Saliva will be forced in during the motions of mouth and tongue.

DR. BROPHY: Mr. President, may I add a word to what I have said on the subject of drainage tubes? These fellows, called microbes, do not all swim, some of them fly. They are everywhere present. While I recognize the fact that saliva is one of the most active ferments that we have, I also recognize the fact that if we have continuous drainage, though the saliva should go into the antrum, which is doubtful, clinical history of these cases teaches us that they will soon get well if properly drained and antiseptically cleansed. The mouth is rarely if ever filled with saliva, the condition

is different from filling the mouth with water and using it as a pump to carry water into the antrum. The patient does not fill his mouth with saliva and then pump it into the antrum. If the saliva enters the antrum and we have continuous drainage, it would not do any harm. Ulcers of the mouth heal under the saliva; they heal under the tongue where saliva is always present. I am not prepared to accept the statement that the antrum must be kept free from saliva in order to get well. I am not prepared to say that we are to exclude it in order to hasten the cure. I have taken out the whole floor of the antrum on many occasions for the removal of tumors and diseased bone, and the saliva has not poisoned the freshly exposed surface nor in any way retarded the process of repair. Only a week or two ago I opened both sides of the antrum and there was very little inflammation. It healed up. The spaces which are sometimes open are made by the removal of necrosed bone, and they heal up without trouble in the presence of saliva. If you get an opening large enough and get drainage the saliva does no harm.

DR. G. V. BLACK: I am aware that the mucous membrane heals under the saliva. I have removed the floor of the antrum and found no difficulty in the healing process, and you will not where there is a continual washing of the parts with the saliva; but it is in those cases where the saliva is cooped up so that it will lodge and decompose that you have trouble, unless you keep the parts clean with a good antiseptic.

DR. BROPHY: The saliva is not cooped up in the antrum, because you have constant drainage.

DR. BLACK: You have a little drainage tube to drain the part, but the hole is small and the antrum is large, you will have fermentation taking place in the antrum. When you put saliva into the cavity of a pulpless tooth what do you have? He who treats abscessed teeth without keeping saliva out knows he will get supuration.

DR. BROPHY: When you use drainage you get a free flow of saliva.

DR. BLACK: You will find that it is where the saliva does not flow freely that decomposition occurs, and there is where you get the trouble. The partial septa and irregularities of the antrum which prevent free flow, have been sufficiently described by the essayist. I see these cases suppurating month after month—suppu-

rating every day. The saliva and other foreign substances do not belong here and they cause inflammation in such places much more certainly than ordinary mucus from the nostrils. We know that saliva injected into rabbits is poisonous and generally kills them. We know when we put human saliva in the tissues or in cavities where it does not belong we get into trouble. At the Chicago College of Dental Surgery the students cut their fingers and applied courtplaster and had suppurating fingers. If they had put a little cassia water on the plaster they would have avoided that, but they licked the plaster. They poisoned themselves by their own saliva. At one time a great many of these cases occurred in that school and the suppurations ceased when they used an antiseptic to wet their plasters.

DR. J. G. REID: I would like to ask Dr. Black a question in regard to saliva. For instance, you have a dog, he cuts himself or is injured in some way. What does he do? He will lay down and lick that sore from morning till night until it gets well.

DR. BLACK: Yes, he keeps licking it all the time and by so doing he prevents fermentation taking place. Suppuration is the breaking down of inflammatory products by the process of fermentation.

DR. A. E. BALDWIN: I did not intend to say anything to-night as it is a subject I know very little about. In opening into the antral cavity the difficulty is to formulate a rule to apply in all cases as this cavity is not regular and the dependent portion is not necessarily in the same place each time. If I were going to open the oral cavity from below, I should open from the outside and not from the alveolar ridge.

It seems to me that the same rule would apply in the treatment of antral affections as in treating pulpless teeth and abscess teeth. I believe oftentimes that the trouble of the antrum is continued by overtreatment, by the use of remedies when they were not needed. Oftentimes simple irrigation with warm water is enough.

I can see no object to be gained by treating the cavity with air.

In regard to the presence or absence of saliva as has been stated we must not forget that the antral cavity is histologically and physiologically somewhat different from the cavity of the mouth. The location and habit of the surroundings will make a great difference in the greater or less irritation caused by the presence of foreign substances. Saliva is foreign to the antral cavity, and there is no

doubt it will cause greater irritation even without any fermentation there than it would in the mouth. If saliva gets into the antrum and remains there until fermentation occurs it must necessarily act as an irritant. I should not fear microbes getting up in there, because they are pretty lively things and will get everywhere. They are present everywhere. The antrum is full of them before you commence to treat it and full of them when you get through. Of course they are not all alike and some cause more irritation than others.

In regard to continuous drainage which has been referred to so much to-night, I do not see how you can get continuous drainage no matter what you do. The head is not carried in the same position. A little change in the position of the head will interfere with continuous drainage. For instance, if the floor of the antrum is tapped in the most dependent portion, let the patient lie down and you will see there is not continuous drainage. I do not see any objection to closing the opening by packing it, providing we see the patient often enough. I see a good deal to commend in that course. I do not think it would be well to leave the opening closed too long. We should see the patient frequently, have the accumulation discharged and the cavity washed out. If I were going to practice to open from the mouth I should keep it closed as much as possible, and only at intervals cleanse and wash out the cavity. The principal thing I would advocate in these cases is to go slow, and be sure that you understand the condition and do not over-treat.

DR. BROPHY: We have to take into consideration the clinical history of these cases. A patient comes to us with antral disease which he needs to have attended to, and knows that the first thing is to get the cavity drained. After we have secured drainage, emptied the cavity of its fermenting contents, we irrigate it, and apply our medicaments. My position on this subject is just this: If you plug a cavity, as one or two of the gentlemen have advocated to-night, so as to be sure that it is closed, you generally find that when it is opened you have a considerable quantity of pus escaping at that time, and that pus I contend, retained within the cavity is a great detriment to the tissues. Pus retards the healing of the tissues more than the saliva which might possibly get in the antrum, and I do not believe that saliva is likely to get in the antrum except the patient makes a special effort to get it there. For that

reason, I have followed both methods of treatment, viz., keeping it plugged, and keeping it open, and I have found in following up the clinical history of the cases, that we get better results, a more speedy cure, if we keep the cavity open so as to drain it continuously. We cannot get constant drainage for the reasons that have been stated. The patient is not upright more than two-thirds of his time; the other time he is asleep. The antrum would certainly get well sooner by having it open at the floor. Plugging of the cavity will hold the secretions which are really irritating the tissues. I consider it far better to keep it open, even if a little saliva did get into it. Saliva upon the mucous membrane produces less irritation than pent-up or retained or decomposing pus. The antrum should be irrigated two or three times a day to get a speedy cure. If it is plugged, you should remove the plug three or four times a day. If you do not do this the patients go over Sundays and holidays and cannot get to the operator to have it treated. It is better to remove the pus than to have it in the antrum. As the last speaker (Dr. Baldwin) has said, the microbes are present there all the time from beginning to the end of treatment, and they will be there afterward. We have to keep in mind the fact that pus is forming and accumulating and we must prevent it from remaining in contact with the diseased tissues, in order to restore the parts to health.

DR. H. H. SCHUHMANN: I have but very little to add, gentlemen, to close this discussion. I wish to tender you my thanks for the very kind reception of my paper.

In writing upon such a subject it would of course be impossible for me to mention all I should like to about the treatment and pathology of the various diseased conditions alluded to in the essay. I am pleased that the discussion became so lively on the question of the use and abuse of drainage tubes. It is apparent that the gentlemen who have advocated the use of the silver tube spoken of have overlooked just what I intended to impress upon them in my paper. They expect a constant free drainage from it—now that is just what they do *not* get, most emphatically *not*. As I have said before if the tube is too long it will drain off no more than the barrell which one of the debaters alluded to, would be drained off by opening it in the middle of its long axis. If the tube is too short the opening in the soft structures will close completely not allowing the fluids to be injected by force much less to flow *off without force*. If the tube is

just right then it is *just wrong*, the mucous membrane closing over the top and forming a valve, fluids can be injected, but will flow off either partially or not at all.

Prof. G. V. Black has given his reasons for abandoning the tube I think Dr. Black's ability in his special line of study is sufficiently well known to us all so no further comment need be made on his remarks.

The drugs to be used—I can only repeat what I have already said—the less the better. If the antrum is over-aseptic, kept aseptic by *mild* antiseptics nature will in most cases do the rest.

My friend, Dr. Morganthau, made some very interesting remarks on “dry method treatment.” I have used it occasionally but don't like the way the powder sometimes becomes caked up and acts as an irritant. When using the method I apply a powder composed of aristol and iodoform equal parts. In the wet method permanganate of potash and listerine, are my favorites. Dr. Black has mentioned oil of cassia this evening. I have never used it but will give it a trial in my next case.

That is all I have to say, gentlemen, on the subject. I thank you for your very kind attention.

SOUTHERN ILLINOIS DENTAL SOCIETY.

Report of the clinics of the sixth annual meeting:

CLINIC NO. 1.

Dr. T. W. Prichett, White Hall, operator, Miss Stella Murphy, East St. Louis, patient.

Case: Left superior lateral incisor, mesial proximal surface badly decayed, requiring a contour filling. The doctor had a large filling to make. The operation was necessarily a long and tedious one, but, as in all else, the doctor proved himself equal to the occasion. He went at it without the least reluctance and patiently maintained an unflagging interest in the case to its completion. He used Hood & Reynolds' cohesive pellets No. $\frac{1}{2}$, starting the filling with a few pellets which he made himself from cohesive foil.

Dr. Prichett's work was nicely and thoroughly executed and he deserves credit for his patience, perseverance and thoroughness in so long and tedious an operation.

CLINIC NO. 2.

Dr. G. W. Entsminger, Carbondale, Ill., operator ; Miss Katie Putnam, East St. Louis, patient.

Case : An aching first superior left molar, with a cavity on the posterior proximal surface extending up and taking in a portion of the coronal surface, pulp exposed. The doctor treated with campho-phenique, giving the pleasant result of relief in a few minutes.

Same operator ; — — —, East St. Louis, patient.

Case : Cavity on anterior proximal surface, extending up and taking in part of the coronal surface of a right superior first molar. The operator used Justi's Star semi-cohesive gold, most of the time doing his own malleting. Although the cavity was not extremely difficult to fill, it required sufficient skill to justify the statement that the people of his vicinity are blessed with the presence of a skillful, careful and conscientious dentist.

CLINIC NO. 3.

Dr. W. N. Morrison, St. Louis, Mo., operator ; Miss Anne Morehead, East St. Louis, patient.

Case : Making and fitting a hollow gold crown on a first superior left bicuspid.

The whole operation to be performed before the Society. The doctor made a band from pure gold No. 30 gauge. Soldering with 20 kt. solder. Swaged the crown with die punch upon a block of lead. After fitting the band and obtaining the proper length, he soldered the cusps to the band and filled in with gold and platinum, then set the crown with Justi's cement.

Of course it goes without saying that the entire operation was executed well in every respect, for all acquainted with Dr. Morrison and his work, well know the thoroughness of his operations.

CLINIC NO. 4.

Dr. W. H. Damon, Mount Vernon, Ill., operator ; Miss Anna Duddleston, patient.

Case : Left superior first bicuspid, crown fissure cavity. Cavity running back to the posterior proximal surface. The doctor used Williams' crystalloid gold No. 2. He did his own malleting throughout the entire operation, and inserted the filling quickly and neatly. He did the entire work very creditably and discharged his patient with a first class filling in her tooth.

CLINIC NO. 5.

Dr. A. D. Penney, Chester, Ill., operator ; Miss Mary Kehoe, East St. Louis, patient.

Case: Anterior proximal cavity extending up into the coronal surface. Pulp exposed. The doctor treated antiseptically with campho-phenique.

Then he anæsthetized the pulp with a six per cent. solution of hydro-chlorate of cocaine.

This being accomplished, he drove a sterilized willow wooden point into the canal with sufficient force to drive the pulp either in or out as the case may be, and to seal up the canal effectually. Crown cavity filled with Dawson's mineral cement.

Same operator ; James H. Marooney, East St. Louis, patient.

Case: Left inferior first molar, exposed pulp, treated in same manner as above and filled with cement to be replaced later with permanent filling.

Operation was performed under protest of the patient.

CLINIC NO. 6.

Dr. C. C. Corbet, Edwardsville, Ill., operator ; Mrs. Hudson, East St. Louis, patient.

Case: First superior right bicuspid, to adjust Logan crown with gold joint between crown and root of tooth. Prepared tooth by cutting off with fissure drill and opening up with Donaldson canal cleaners, Gates-Glidden drills and canal reamers. Used as a medicament H_2O_2 in full strength. After fitting the crown to the root, he folded together 130 thicknesses of Globe No. 4 noncohesive foil. Through this mat he drilled a hole sufficiently large for the post of the crown.

Then he placed the mat of gold on the crown post and set on the root with cement, using mallet and the force of biting to adjust the crown.

Then he burnished the gold down to the root. It was a nice operation, and one that will most likely prove useful and durable.

CLINIC NO. 7.

Dr. G. A. McMillan, Alton, Ill., operator; Miss Martha Schnell, East St. Louis, patient.

Case: First inferior left molar, buccal cavity extending from the free margin of the gum up to, and nearly across the coronal surface. After a careful preparation, it was filled with copper amalgam.

Same operator, same patient.

Case: Second inferior right molar cavity taking in nearly all of the buccal surface of the tooth, and extending down under the free margin of the gum, rendering the use of a clamp almost impossible.

After preparing the cavity, the doctor occupied less than five minutes to pack the gold into place, using White's Globe non-cohesive No. 4.

Taking into consideration the position of the cavity and the short time required to fill it, we consider that a capital hit was made in favor of the use of noncohesive foil, and that the doctor has placed himself on record as one that has the unquestioned ability to use it successfully.

His work was thorough and deserves commendation.

CLINIC NO. 8.

Dr. John G. Harper, St. Louis, Mo., operator ; Dr. H. R. Rutledge, Hillsboro, Ill., patient.

Case: Right superior cuspid cavity extending from the cervical border of the distal surface up to, and embracing most of the coronal surface.

Tooth devitalized and root previously filled. Root filling left in place and tooth filled with Rowan's Decimal cohesive foil No. 4 folded to the thickness of No. 16 and No. 32.

The entire malleting was done with pneumatic pluggers, using both the Palmer and the David mallet. He also used the Harper rubber dam holder, a very unique and convenient appliance. In our observations of the pneumatic plugger, we were impressed with the strength of stroke as well as the ease with which it is handled and the fact that in its use no assistant is required.

The doctor had a very difficult case, and the rapidity with which he completed the operation speaks volumes of praise for the pneumatic plugger as well as the congenial doctor himself.

Now, gentlemen, in conclusion we desire to say that upon the whole the clinics were a decided success. The operators performed the duties assigned with an ease, gentleness and grace that reflected from their brows a mark of unblemished courtesy; they also showed that they had a sacred regard for honesty and thoroughness in their operations.

L. B. TORRENCE, Supervisor of Clinics.

J. J. JENELLE, G. W. ENTSMINGER, Assistants.

THE DENTAL REVIEW.

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A COMMON DEFECT IN THE INSERTION OF GOLD.

It would sometimes seem that nothing short of constant reiteration would lead to the correction of certain defects in operations which we see in every day practice.

For many years after the general introduction of amalgam, a common defect in the manipulation of this material in proximate cavities on molars and bicuspid was to allow an excess of the filling material to hang over the margin of the cavity at the cervical border. Unless amalgam be trimmed to shape before crystallization has taken place it is exceedingly difficult to dress it down to a proper form. Amalgam when hard does not cut so easily as gold. This has at last been generally recognized by the profession and in these days—thanks to repeated caution against overhanging amalgam—we rarely see this defect coming from the hands of a reasonably careful operator.

But it took a great deal of talk to correct this practice, and now we are called upon to keep up the war against a very prevalent defect in the manipulation of gold.

This defect is briefly summed up in the failure to gain perfect adaptation along the wall of the cavity which stands nearest to the operator. This wall, especially if the cavity is in a molar or bicuspid, is usually in such a position that the operator cannot see it without the aid of a mirror, and therefore defects are easily overlooked. It may as well be recognized at once that it is in many cases impossible to gain adaptation against these walls with the ordinary pluggers used with mallet force. The principle is wrong.

Walls which are in plain sight and against which the plugger points may be placed with direct pressure admit of mallet force, but these remote places can be reached only with properly curved pluggers—preferably right angles—and the force used must be hand pressure. The gold should be *pulled* against the walls, and the force exerted in the direct line in which we wish the material to be condensed. To attempt to fill all cavities with the mallet is to invite failure.

This matter has been mentioned so often that there would be little excuse for calling attention to it again were it not for the fact that we see every day cases staring us in the face where failure has occurred from lack of attention to this particular point.

C. N. J.

THE ANNUAL OUTFLOW.

In this issue we begin the publication of lists of new graduates from the various dental colleges of this country. We trust that every one of them is prepared to take his place among his fellows better equipped than any previous new graduates and that the influence of all will be to uplift the name of dentistry by contributing in some way to its literature, in the field of invention or discovery. Humanitarianism joined to honesty of purpose will make for the fledgling a place wherever his services are needed. The profession is not overcrowded, except in number, and we have a strong belief in the survival of the fittest. The period of study is over for the self-satisfied and indolent, but it has only begun for the one who is ambitious for a place, a name, or the opportunity to become of service to mankind. Success to every earnest, honest and right-minded one of the whole number.

THE CHICAGO DENTAL SOCIETY.

Within the last two years the Chicago Dental Society has improved a great deal. The character of the papers read before it, their number and the regularity with which essayists have filled their places, are features highly commendable. In no small measure this has been due to the publication of the papers read, and of the discussions in the DENTAL REVIEW, thus giving the thoughts of the members of the society a wide range of circulation and extending its usefulness beyond the confines of the city and her dentists.

It has also been the policy of the Society to introduce younger members, and as a result thereof several of the best papers read during the past year were by young men. The Society is rapidly gaining in popularity, the interest shown in the meetings is constantly increasing and the good work accomplished by the improvement of its members, both mentally and socially, is well deserving of the highest praise. For the coming year, a programme is in course of preparation, which will still further commend the Society to the profession of Chicago. No dentist who pretends to be in the vanguard can afford to be absent from such meetings. Dentists who are about to visit the city should bear in mind that the meetings are held on the first Tuesday of each month (except August and September), guests are always cordially welcome.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

To the Editor of the Dental Review :

Things have taken a leap this month. It is leap year. A paper on the present code of ethics has proved a testy subject. In the absence of the expected essayist, caused by illness, Dr. Ottolengui filled the gap with the above named paper, and it did fill it full, and some of it has been published in daily papers, together with some of the discussions which followed it. Dr. Ottolengui has written a good many papers, but none that will attract more attention than this one. This session will prove a memorable one. The readers of my former letters will recall that I spoke of a resolution which pointed direct to the ineligibility of dentists holding patents. This came up, for acceptance or rejection. It was accepted and became a part of the by-laws of the First District Society of New York. In the reports of the daily papers, of this meeting, I find this statement: "This society leads all other societies in advanced matters." We ask, will it in this step just taken? An amendment was added that requires all present members to sign this by-law; also a second amendment forbids not only the case of exhibition at the door, but inside the office as well. To add to the color of the entire session, "black balls" fell thick, and only one candidate for membership, out of a list of four, was

elected. That some idea may be formed of the spirit generated during the present administration and culminating at this session, I give this piece of news: After the meeting closed Dr. Norman W. Kingsley wrote out his resignation and left it in the hands of the secretary. This has been forced by self-respect. From the moment Dr. Kingsley was made president a determined purpose has been forcing his administration, in order to bring defeat. Many stories were in circulation. One was this—"that fifteen members would resign;" and a second, which seemed like a thought to go slow, that "they would remain and pay their dues and not attend the meetings." Yet each meeting has revealed the fact that no time would be lost in doing all that evil-minded men could do to destroy the harmony of the society. We say "evil-minded men," for it could not have been good-minded men that would have gone to such extremes.

The first real showing of the animus, revealed itself at the anniversary meeting in January. We will give it as it was given to us by Dr. Kingsley, and it has been verified to me by a prominent member of the Odontological Society. "It was found that the first allotment of time for holding the anniversary meeting was going to conflict with a meeting of the committee of the World's Columbian Dental Congress committee, to be held in Chicago. An effort was made to secure the rooms in the Academy of Medicine upon dates that would not conflict with the regular meeting of the Odontological Society, but it could not be done. Then Dr. Kingsley called upon the chairman of the executive committee of this body and proposed a compromise, offering to surrender the chair to the president of the O. S. the evening of their meeting and hold a joint meeting," as most of the members belong to the First District Society. This was absolutely rejected and the result was a meeting of both societies in the same building and on the same evening, and almost an entire absence of the O. S. members from all anniversary meetings. This was made the occasion of much gossip, and no little mortification for those visiting. Much regret was expressed by men of too much influence to think that they will not resent it at a time which will surely come when the good name of our profession will be protected from such scandal, saddled upon it by an attack on a member who has contributed more in his line than any other member.

Let us ask who are to be contributors in the coming World's

Columbian Dental Congress? If not men of such ability as Dr. Kingsley, then we say fearlessly, it will be a disgrace to the management. No practitioner in New York City, and I may say in any portion of the world has better maintained the dignity of his profession, with contributions of acquired skill and the maintenance of remunerative fees. Dr. Kingsley has won a professional fame that no one can destroy by assailment, for personal motives. Only two months since such a brilliant operator as Dr. E. Parmly Brown was blackballed as a candidate for membership in the First District Society, purely on personal grounds. What are such doings going to lead to?

It looks too much like what is being so much condemned in politics, "bossism."

It would have seemed that these intended obstacles thrown in the way of the present management of this society, would have sufficed; but no, we are told that the committee was called upon by the caterers that were to furnish a banquet and asked to pay the money in advance, as the caterers had been advised that if they did not do so they would get "left."

If these things be true, and they are, has not the good name of the society had something to test its strength? "A good name is better than riches." We predict that the party that has brought dishonor to the First District Society, will live to reap a full harvest from such seed sowing.

It was freely said that this disturbance would manifest the growth of an unfortunate animus, that would endanger the best results to be obtained at the Chicago meeting. I do not need to emphasize Dr. Kingsley's preëminence in our profession. It is true that he has no peer in the line of his specialty. Whatever personal grievance one may chance to have, no upright man would allow himself to place a blotch upon one's true professional fame. But, it has been done by some one, and by it a flagrant discourtesy has been placed at the door of the First District Society and upon those who were the guests of the anniversary meeting. This trouble has come by its own members.

The use of books, by Black, in the February number of the REVIEW, is worthy of more than a passing notice. How do men read? All cannot read alike, but all men can cultivate reading. It is true, as Dr. Black says, men who do not read some one or

more of the journals will fall behind in ability. We think that is a saying which ought to be italicized. We can name not a few men who do not make themselves familiar with the contents of the journal or journals which they subscribe for. They of course help to support them financially. That is good as far as it goes. Within a year we had occasion to get the views of *prominent* members of our profession on a certain article. We interviewed eleven, and found *one* that had "Just glanced it over." This, ten days after it had come to hand. We not infrequently refer to something we have met in the journals and I am asked, "Where did you see that?" Here is an instance: Dr. Morgan Howe called the attention of the Odontological Society at the last meeting to an article by Dr. Stebbins in the October number of the *International*, "The treatment of caries by the use of nitrate of silver." He remarked that he did so that members might become familiar with the subject clinically as Dr. Stebbins had promised to present the subject to them sometime during the year. He said further, that he had become aware that *some* members were not always cognizant of how much they lost in not being familiar with the contents of the journal. This tells the story. It is so all along the line, yet there are close readers and they are obliged to read some things that make professional men's blood tingle. What are we to think when there are those who deliberately say they see the profession filling up with so much indifferent material that they are glad that none of their sons have joined the ranks. Yet they have accepted all the emoluments offered, for themselves. This disposition to smirch our professional escutcheon, which is going the rounds with untempered mortals, is an unhealthy sign for whom? for the ones that are in it. *Felix quemcum facient alena percide contum.*

Jersey was out in "full dress" at the annual dinner and meeting this month. One hundred and five open mouths were well filled with the unexcelled menu. We think New Jersey has a good grip on dental prosperity. They all dress well and that goes far for good looks. I don't know as they have gotten as far as Dr. Shepard says they have in Boston—"owning their homes." But they have got it fixed for interlopers. Any man that comes here for practice—"shoot him on the spot." It is said to be a *lucky hit*. If any is found meek and can't explain, he gets meeker.

W. W. Walker responded to a toast and elevated the New York

State Society to a dizzy height. Jersey went them one better in legislation. They have established one thing which is much needed for the success of the World's Fair meeting, that is unity, and "as go the Jersey boys so goes the politics of the American Dental Association." We all know that after-dinner speeches are far from reliable. It reminds us of the fable of the Cat and the Rat. The rat had fallen into the vat of liquor and the cat being conveniently by, was appealed to for help from his sure destruction, but the cat wisely replied, I would eat you. The rat quickly answered, I will let you. Upon this the cat placed her dear friend out of all danger and quietly awaited the ratification of the compact: but in the meantime the rat had quickly sped to his hole out of harm's way and complacently viewed the situation, whereupon the cat disappointedly called the rat's attention to his promise. Yes, yes, the rat replied, I did make that promise, but you must know *I was in liquor then*. Not a few of New York and Brooklyn were present and went home early. Drs. Dwinnelle, Bogue, Kingsley, Francis, Carr, Grans, McLaren, Heart, McAvenny, Ottolengui and Walker (with one W), Rippier and Campbell, of Brooklyn men. We missed the genial Stockton. We hope he is not going to be smoked out; also Levy, perhaps he was "smoking down below," he was absent. The Jersey boys will rejoice over the prophetic speeches that are reported in the February REVIEW, which assure harmony and success to the Columbian Dental Congress, which "they originated." We thought New York was the only place which could send out loving cups, but we think, judging from Dr. Crouse's speech before the society in Chicago, that Chicago dentists could profit by going into the business and send a "loving cup" wherever she hears rumors of discord. The Doctor travels so much, he might be a good director in such a work of philanthropy.

By the way of a suggestion, doctor, have one in your vest when you come East in March to the big mass meeting. Dr. Walker said he expected 1,100 present, and to make them all members. We told him we hoped we could report the fact. Just think of it Doctor, your sorrows are all over. We suspect a surprise awaits us all at this big deal. It is always the unexpected that happens. It will be a dry subject to travel so far as "all over" Pennsylvania, New Jersey, New York and New England, to join a protective association. If only the projectors of this meeting will intimate a theater party, or a Trip to Chinatown, or a 75 cent *table d' hote*

dinner, at the great Columbian restaurant, how appropriate this would be. It so chimes in with what all our hearts are beating over, in anticipation. The five societies have started the ball. If this 1,100 could all dine together once more! *Fimrior quo por atior*. The discussion before the Chicago society in the interest of post graduate study cannot fail to enlist earnest attention, in a general way, at least. It strikes us marvelously, that there are so many non-graduates. We have taken a decided interest in this class who are well known for their faithful pioneer work, particularly during the last thirty years. These men have all been active participants in society work and college teaching. They will not, nor cannot, nor ought not to be called upon to pass muster, so to speak, that they may be on a "level" with graduates.

This class which we refer to, some of them are fully equal, and it is not saying too much, to say that some are far superior. Some of the graduates would be surprised to know that names with which they are familiar are "not on the list." Very many who appear as graduates never pursued any specific course of study. Some are what are termed "honorarys." Many degrees are simply conferred on the basis of a certain number of years of practice. I could name many in New York, who would stand on a level with any graduate, so far as being truly professional and of good general intelligence, and have sustained first-class clientelles for forty years. I will give the names of Drs. King, Lord and Clowes. We could give hundreds of such names throughout the country. I have thought it would not be a bad idea to publish the list and let those who are younger see who have been diligent in the advancement of the true interest and elevation of our profession. For many reasons that would have no bearing upon present conditions these practitioners have not secured a degree, but they are on the level with all that pertains to progress. We would emphasize close attention to all future incomers.

Dr. Porter, of Denver formerly, now of Gotham, told how he treated pulpless teeth, and why he used noncoagulants. Dr. Harlan would have almost felt he was doing it himself. This was at the January meeting. In the press of circumstances last month we overlooked notice of the occasion and then we found we could not be in two places at once, although in the same building. It may not be generally known that the First District Society has

the capacity of doing just this thing, for most of the members of the Odontological Society are members of the First District, in this way the double meeting was accomplished. Dr. Crouse, we noticed, played the part of Hyde and Jekyll that evening, in fact he was seeking all the protection possible. He could not fully make up his mind that he was getting what he sought. He told them that, as he came in, he thought he was coming to a dental meeting, it looked like one, and he saw bones and teeth all about him and many familiar faces, but the character of the discussion after listening to it for some time, it suggested itself to him that he might be in a kindergarten school. He did not find it necessary to go into all this scientific gymnastics to fill pulpless teeth. He first got a good free delivery into the tooth and pulp chamber and then put in the carbolic acid and, with a rubber plunger that filled the aperture, he just jumped on to it and coagulated the whole business and trouble fore and aft, and so far as abscess had to do with his practice, he had found only three that he could not drop in twenty years. The Dr. is all practice, whatever his hands find to do he does it. He carries the courage of his convictions in his vest and although he so much makes us think of the tale Mulberry Sellers, he does not, like him, leave them behind by changing his vest, and he thinks and fully believes that in this Dental Protective Association, which is his pet, there is millions already. He says, it has saved a million for the profession and if the bridge patent shares the same fate ultimately there is certainly another million saved.

At the February meeting of the Odontological Society, Dr. Jack came over and inspired the audience by reading a very practical paper on the past and future uses of this D. P. A. and he did it ably and well, and so accorded all. Although "la grippe" had had a tussle with Editor Kirk, he did not fail to show that he had a good grip on the practical workings of this body, for he viewed it purely from a business standpoint. He thought one thing had gotten into the minds of many mistakably, that this body was in conflict with *valid patents*, while it only had to do with invalid ones. Valid ones were entirely out of their jurisdiction. Among incidents of office practice Dr. Ottolengui related an experience with chloroform inhaled to the point of nonsensation and then the excavation was accomplished painlessly. He inquired if any one could tell him by verification or by confirmation, of a like experience? We spoke of our own experience in person, as taught us by the late Dr. Riggs

in 1874, and since in many hundred cases. This method of using chloroform is what is known as analæsia, which is a loss of sensation without the loss of consciousness. Dr Riggs' method was to snuff it through the nose, intermittently until the patient became conscious of its effect and then proceeded to operate, and the patient knowing his own needs as the effect passed away, would help himself, either with or without the aid of the operator, to an additional supply. In this way it could be made invaluable in any and all painful service. In *all* of our experience we have not met with any unfavorable results, but in all cases with the most happy ones. We published an article on this subject, a few years since, in the *Archives*. If any one could intelligently know the facts, as we know them, they would feel that they had found a *friend* in the much misjudged article chloroform.

Dr. Northrop sought to raise a signal of warning by instancing the sad demise of young Mrs. Harper, at Yonkers, two years since. We are acquainted enough with the facts to state, that we do not believe that she would have lost her life in the hands of an intelligent dentist. *Intelligent* dentists do not need physicians to complicate their services. Men want a good earnest heart and an active intelligence, coupled with mechanical ability, to practice dentistry. We say it happily, and fearlessly that prolonged suffering is not a visitor in our office any more. If any one doubts it, call and watch us. Our practice is coming largely into the so-called "cruel Riggs treatment." We are carrying out our promise to the late Drs. Atkinson and Riggs to do all in our power to promote their theory and practises. This is the purpose of our post graduate teachings to classes and students prepared for college training.

P. S.—To be sure at the last moment that what we state, regarding Dr. Kingsley's movements, we can say with authority that his resignation from both city societies is in the hands of the proper officers and will doubtless be acted upon at the March meeting. We append here the additional by-law and its amendments as they were passed.*

The D. P. A. mass meeting is to come off March 28, and don't you forget it.

Ex.

*See memoranda.

REVIEWS AND ABSTRACTS.

CATCHING'S COMPENDIUM OF DENTISTRY FOR 1891. B. H. Catching, D. D. S., editor and publisher, Atlanta, Ga., 1892. Price \$2.00. For sale by dental dealers and by the publisher.

The compendium of 1891 contains 241 well-printed pages on good paper, preserved within a cloth cover.

It contains about 300 articles copied from the various dental journals, of which the DENTAL REVIEW has the honor of having been called upon to furnish nearly forty. Every phase of practical dentistry is represented, and the subjects are arranged under heads in such a manner that any desired topic may be found and referred to without delay. The book is a useful one, especially to the man who does not think that he has the time to read as he goes along, for in this volume there is presented to him the cream of the literature of the past year. It also contains a list of the various dental journals throughout the world and a synopsis of the dental laws of the United States and Canada.

DENTAL COLLEGE COMMENCEMENTS.

KANSAS CITY DENTAL COLLEGE.

The tenth annual commencement exercises of the Kansas City Dental College were held at the Grand Avenue M. E. Church, Kansas City, Mo., March 4, 1892.

The faculty address was delivered by Prof. Theo. Stanley, also an address by Rev. J. E. Roberts. The degree of Doctor of Dental Surgery was conferred by Dr. L. C. Wasson, President of the college association on the following named (50) candidates;

Charles Willam Day.
David Kerr Bryson.
Harry Baile Engel.
Harry Mitchell Doyle.
Charles Willetts Thompson.
Henry Wilfred Kelly.
Alanson Tuttle Havelly.
William Amos McKee.
Frank M. Blake.
Johann Christian Buttner.
Ernest Prindell Noble.
Jefferson Davis Barton.
Harry Hurt Turner.
Robert Edgar Barton.
Oliver Tennyson Griner.
Arthur Hoffman Bagby.
John Malcolm Campbell.
Frank Lincoln Williams.
James Daniel Neff.
Irwin Wilson Dills.
James William O'Bryon.
James Whitehill Butt.
John Howell Jenkins.
Ned Elmore White.
John George Alexander Kydd.

Arthur Monroe Tutt.
Martin Henry Hopfer.
George Leon Tetrick.
Samuel Joseph Renz
John Bratton Woodside.
Walter Emmitt Highnote.
Daniel Franklin Pendleton.
George Washington Aberman.
Ludwig Henning Bredouw.
Fred Louis Cobb.
Frank Lenoir Carter.
Mark Chester Lovell.
James Henry Goodwin.
Gustavus Montgomery Cross.
Amasa Molton Farnham.
Woodson Thompson Smith.
Ole Anderson Smith.
Schuyler Colfax Grant.
Fred Pierce Cronkite.
George Daniel Mitchell.
Pitts Elmer Wilhite.
Clifford Howell Nelson.
Henry Eugene Lindas.
Arthur Lee Lindsey.
Eugene Aquilla Chase.

INDIANA DENTAL COLLEGE.

The thirteenth annual commencement exercises of the Indiana Dental College were held at English's Opera House, Indianapolis, Ind., March 1st., 1892.

The number of matriculates during the past session was eighty-eight.

Dr. John D. P. John, of De Pauw University, delivered an address.

The degree of Doctor of Dental Surgery was then conferred on the following (56) candidates :

D. A. Elwell, Ohio.	W. Anderson, Minn.
G. C. Fleischman, Wis.	D. L. Lucas, Cal.
W. A. Gant, Ind.	W. G. Burket, Ind.
E. H. Gage, Ind.	B. B. Lockhart, Ind.
J. H. George, Ind.	B. F. Batson, Ill.
H. C. Goodrich, Ind.	J. O. Miessen, Ind.
C. F. Gray, Ind.	G. W. Burch, Neb.
B. F. Gray, Ind.	P. N. Maln, Minn.
D. W. Gray, Ind.	C. E. Burket, Ind.
W. M. Hall, Ind.	W. J. Morris, Ind.
Elmer A. Smythe, Ind.	Orlando Burns, Ind.
R. W. Sessions, Ind.	W. L. McNamara, Ohio.
Blaine Sellers, Ind.	J. H. Bloor, Ohio.
J. G. Schneider, Wis.	W. J. Bradbury, Wis.
T. W. Scott, Ohio.	G. G. Bilman, Ind.
E. B. Tyler, Ind.	H. M. Brown, Ill.
C. W. Throop, Mich.	W. T. Clarke, Texas.
F. E. Woods, Ind.	Harry Corken, Ohio.
Q. H. Woodruff, Ind.	W. E. Diley, Ind.
M. L. White, Ind.	H. E. Dewar, Mich.
J. E. Henderson, Ind.	Charles B. Fletcher, Ind.
F. Wright, Minn.	A. A. Powell, Ind.
W. H. Harp, Ill.	E. E. Pierce, Ind.
A. T. White, Ind.	D. L. Prall, Ind.
D. S. Hontz, Ind.	P. A. Rood, Ind.
F. Winchester, Mich.	Claue V. Runyan, Ind.
W. Z. King, Ind.	M. A. Root, Mich.
C. C. Lester, Ind.	W. B. Raidgeway, Ind.

MEHARRY SCHOOL OF DENTISTRY.

The sixth annual commencement exercises of the dental department of Meharry Medical College were held in connection with that of the Medical and Pharmaceutical, February 18, at Nashville, Tenn. President J. Braden conferred the degree of Doctor of Dental Surgery on J. B. Singleton, of South Carolina.

Geo. W. Miller, of the medical class, gave the address of welcome, and J. W. Holmes delivered the valedictory. Robert Tyler, of Alabama, represented the pharmaceutical classes.

The charge to the graduates was given by R. F. Boyd, M. D., D. D. S., Professor of Physiology, Hygiene and Clinical Medicine. Rev. John Pierson, D. D., of Cincinnati, was present and gave an earnest and appropriate address to the graduating class.

During the past session seven students have been enrolled in the dental department.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The thirty-sixth annual commencement exercises of the Pennsylvania College of Dental Surgery were held at the Academy of Music, Philadelphia, Penn., on March 2, 1892.

The number of matriculates during the past session was two hundred and seven.

The annual address was delivered by Prof. Albert P. Brubaker, M. D., D. D. S.

The degree of Doctor of Dental Surgery was conferred by the President, I. Minis Hays, M. D., upon the following (103) graduates:

- | | |
|-------------------------------------|-------------------------------------|
| C. E. Algeire, New York. | W. C. McCarthy, New York. |
| C. M. Ashton, Pennsylvania. | G. S. McDowell, Pennsylvania. |
| A. R. Atwood, New Jersey. | Joe E. Mittinger, Pennsylvania. |
| Edwin Banton, New York. | G. A. Miller, Pennsylvania. |
| H. Baumgartner, Pennsylvania. | E. L. Moore, Pennsylvania. |
| Caleb Bird, New York. | W. A. May, Canada. |
| Edith L. Brown, Pennsylvania. | D. H. Morgan, Ohio. |
| H. S. Brown, Pennsylvania. | T. D. Morrison, Kentucky. |
| Sylvester Byrne, Jr., Pennsylvania. | D. A. Myers, Pennsylvania. |
| Thos. H. Carr, New York. | Girardo Nuñez, Colombia, S. A. |
| D. H. Covert, Canada. | J. C. Nolen, Pennsylvania. |
| C. C. Corbiera, California. | C. L. Pearson, New York. |
| C. J. Chambers, Pennsylvania. | R. B. Pealer, Pennsylvania. |
| S. S. Crow, Missouri. | J. R. Powell, New York. |
| John Davenport, Pennsylvania. | Pauline Prime, New York. |
| A. R. Day, New York. | Raul Ramos, Cuba. |
| W. H. Deal, New York. | Samuel Rankin, Pennsylvania. |
| Geo. Doerbecker, Illinois. | W. A. Robb, Pennsylvania. |
| Geo. R. Drew, Massachusetts. | Joaquin Restrepo, Colombia, S. A. |
| H. J. Fleming, Pennsylvania. | J. C. Reynolds, Pennsylvania. |
| Henry Fischer, Germany. | E. C. Rice, Pennsylvania. |
| L. H. Frantz, Pennsylvania. | Oswaldo Ros, Cuba. |
| C. E. Foster, New Hampshire. | J. H. Ross, Missouri. |
| Emilio Galvis, Colombia, S. A. | J. W. Ross, Pennsylvania. |
| Wm. Glading, Pennsylvania. | W. J. Roe, Canada. |
| W. B. Gearhart, Pennsylvania. | J. H. Russell, Pennsylvania. |
| W. C. Griffith, Pennsylvania. | W. A. Russell, Pennsylvania. |
| Geo. F. A. Graf, New York. | J. P. Sager, Pennsylvania. |
| C. H. Green, Delaware. | Sophie Tuchner Satinover, Roumania. |
| Mayo A. Greenlaw, California. | F. W. Shephard, Wisconsin. |
| W. C. Gutelius, Pennsylvania. | Ivar Siqveland, Minnesota. |
| F. E. Guteliuss, Pennsylvania. | E. M. Slonaker, Pennsylvania. |
| A. J. Hamm, Massachusetts. | J. H. Slaughter, New Jersey. |
| Josiah Hartzell, Ohio. | M. W. Snow, Utah. |
| Mittie Tudor Haley, Virginia. | O. W. Snow, Utah. |
| E. B. Heston, Pennsylvania. | Martha Sochatzey, Germany. |
| Luther Hogarth, Canada. | Thad. Stine, Pennsylvania. |
| Edwin Hollenback, Pennsylvania. | M. A. Street, New Jersey. |
| C. A. Hottenstein, Pennsylvania. | C. S. Street, New Jersey. |
| Alice Jarvis, Michigan. | E. A. Talmage, Pennsylvania. |
| Mary Jaffe, Russia. | F. W. Tate, New York. |
| Samuel Johnson, New Jersey. | L. G. Terry, New York. |
| M. W. Jennings, Pennsylvania. | John Toprahanian, Turkey. |
| A. H. Keats, Minnesota. | J. W. Todd, Pennsylvania. |
| Mary E. Keyser, Pennsylvania. | Archie V. Toy, Pennsylvania. |
| Geo. Kumpf, Canada. | G. A. Vandersluis, Minnesota. |
| H. H. Kuhn, Maryland. | C. E. Wade, Pennsylvania. |
| W. H. Lancaster, Connecticut. | E. F. Wayne, Pennsylvania. |
| P. L. Longnecker, Pennsylvania. | J. H. Wardlaw, Canada. |
| M. W. Maratta, Pennsylvania. | G. M. Weirich, Pennsylvania. |
| O. J. Marcy, Pennsylvania. | E. C. Wiley, Pennsylvania |
| Jeannie Magnin, Germany. | |

SOUTHERN MEDICAL COLLEGE—DENTAL DEPARTMENT.

The fifth annual commencement exercises of the Dental Department of the Southern Dental College were held at De Gives Opera House, Atlanta, Ga., on February 29, 1892.

The number of matriculates during the past session was ninety-eight.

The valedictory address was delivered by Dr. W. S. Trent, of Alabama.

The degree of Doctor of Dental Surgery was conferred by Dr. J. S. Powell, President of Southern Medical College, upon the following named (51) candidates:

Henry R. Jewett.
T. W. Henderson.
Robt. A. Patterson.
Wm. Christopher Morgan.
C. F. Mermilliod, Jr.
W. A. Ellis.
J. J. Hendley.
Obed E. Griffin.
W. Luckie Cason.
Frank A. Henley.
W. H. Spinks.
Charles M. Bess.
J. C. Powell.
Jas. L. Dean.
Wm. A. Blasingame.
John C. Smith.
Willie G. Mason.
John R. Warren.
Geo. D. Stovall.
Geo. H. Davis.
Thos. D. Leonard.
Wm. F. Moore.
William L. Hightower.
Thos. D. Coty.
David M. Snelson.
R. P. Jackson.

Wm. E. Wheeler.
Z. Greene.
J. E. Cramer.
John R. Rountree,
W. Emmett Bugg.
Alfred A. Patterson.
Geo. R. Lovelace.
Charles C. Burbank.
A. C. Parry.
Stephen O. Poore.
Andrew M. Jamerson, M. D.
Frank H. Smith.
Thomas B. Robbins.
Joseph G. Heard.
H. W. Carpenter.
G. K. Hawley.
Addiel M. Jackson.
E. N. Kibler.
Wm. A. Summerlin.
Wm. McLauren Bethea.
Claudius C. Parrish.
William Stewart Trent.
J. H. Cates.
Wm. Beckom Cone.
T. R. Jones.

PRACTICAL NOTES.

REPLANTING ELONGATED TEETH.

BY T. W. PRICHETT, WHITEHALL, ILL.

Some time ago you solicited reports of cases of elongated teeth—replanted.

A case was treated by Dr. Gustavus North and myself four years ago next April which has proven highly satisfactory.

The case was a lower central incisor—elongated one-eighth of an inch, and so loose the tongue would move it forward and back through a distance of half an inch. The sockets of all the incisors were shortened to half their normal height.

Treatment—extracted tooth. Drilled through crown to pulp

chamber. Removed pulp, using freely of bichloride of mercury solution in pulp chamber and root canal.

Filled root with chloropercha and gutta-percha cone—crown with amalgam.

While preparing the socket, kept the tooth immersed in an eight per cent solution of carbolic acid—100° F. temperature.

Deepened socket until tooth was even with adjoining teeth, sterilizing with peroxide of hydrogen and bichloride of mercury alternately.

Inserted tooth—binding tooth in place with ordinary iron binding wire, looped around the adjacent tooth—cross tying through the interdental spaces.

This fixture was retained comfortably to the wearer until the following November, when it was removed.

The tooth to-day is rigid in its position, and is, and has been, as useful as any of its fellows. Subject is sixty-five years old.

? ? ?

Have just been reading "Practical Notes" in the February REVIEW, and noticed what "F." says as to case in soldering a gold plate after striking up. I would like to ask this question. Given a gold plate and rubber attachment; why not solder loops with fusible metal? It will be so covered with rubber as to prevent any deleterious influences, and will not the freedom from anxiety as to warping more than compensate for any trouble caused by a possible necessity to re-swage in after years?

Yours,

M.

MEMORANDA.

Dr. A. W. McCandless, of Davenport, Ia., was a recent visitor to Chicago.

Dr. A. G. Bowman, formerly of Monroe, La., is now located in New Orleans, La.

Mr. J. H. Mummary is the new president of the Odontological Society of Great Britain.

The "Atkinson Dental Society," of Chicago, completed its organization by adopting a constitution and by-laws March 14th.

Dr. J. G. Reid read a paper on "Gold in Operative Dentistry" before the Odontographic Society of Chicago, March 14th.

Dr. Ferdinand King proposes to publish in an early edition of *The Doctor's Weekly* a complete list of medical, dental, pharmaceutical, veterinary and scientific journals.

Dr. Guillermo Vargas Paredes, of Bogotá, is Secretary of the section on oral and dental surgery of the Pan-American Medical Congress to be held in the United States of Columbia.

Aristol for stomatitis, "canker sore mouth," on the exposed pulp and in the roots of teeth with multiple openings, *i. e.*, after the drill has passed through the side of a root, etc.

After a long intermission here we are again :

The North Side Dental College and Infirmary, Chicago ; capital stock, \$1,000 ; incorporators, A. H. Lane, T. M. Smith and H. C. Lane.

The *Dental World* is a new dental journal, the first number having appeared March 11. It is a successor to the defunct *Dental Mirror* formerly published in New York. Published monthly by F. W. Leonard, 85 Fifth Avenue, Chicago. Subscription 50 cents per annum.

DES MOINES, IA., February 26, 1892.

The thirtieth annual meeting of the Iowa Dental Society, will be held at Ottumwa, May 3d, 4th, 5th and 6th, 1892. All are cordially invited to attend.

G. W. MILLER, Sec.

Dr. John G. Harper sends the following recipe for a Hand Lotion:

℞	Bay Rum.
	Glycerine.
	Ex. Witch Hazel.
M.	Aqua Rosa $a a \frac{2}{3} j$.
	S. Hand Lotion.

Thoroughly wash and dry the hands, then apply. The best time, just before retiring for the night.

At the February meeting of the Chicago Dental Club, Dr. Bayard Holmes delivered an address on the "Evolution of Disease." The Rev. Dr. J. L. Withrow, of Chicago, made a few remarks to the club from the standpoint of a layman. The doctor said that dentistry was "the distinctively polite profession"—no civilization—no dentists. He made a plea for personal and professional cleanliness which was quite pointed. The Doctor does not believe in smoking or drinking by dentists, but he advocated the use of perfumes!—which makes us "to remark" that a clean man (or woman) needs them not.

Dr. Oscar Amoedo, of Paris (*L'Univers Medical*, No. 8, 1891), gives the following directions to avoid the toxic effects of cocaine:

1. The injections should be made with antiseptic precautions ; the solution made with boiled or distilled water when about to be used. On filling the syringe the point should be rolled with cotton in order to filter the solution which passes into the syringe.

2. The injection should not be made when the patient has an empty stomach.

3. The patient should be in a horizontal position.

4. The patient's clothes should be loose.

5 He should be under the influence of alcohol, given a half-hour in advance.
 6 Persons who are suffering from a disease of the lungs, heart, or kidneys, or have any cachexia, should be carefully watched and in such cases the dose should not exceed one cgm.

7 Women are more susceptible to the action of cocaine than men.

8 As antidotes one may administer inhalations of ammonia, acetic acid, or nitrite of amyl, effusions of cold water to the back and chest. Any alcoholic may be given, to which may be added five to ten drops of ether.

9 The nitrite of amyl may be administered in pearls, which are broken, when desired for use.

10 The syringe-needle should be introduced with the quantity measured in order to avoid injecting the solution into a vein and the pain of the puncture.

11 The hydrochlorate of cocaine, in doses of five mgms. to two cgms. produces local anæsthesia sufficient to perform painlessly minor surgical operations.—*Arch. of Gynecology.*

DENTO-GYNÆCOLOGY.

Examine under the tongue for two teats, about the size of No. 4 shot, each attached to a slender cord in which a nerve runs, connecting with the genital center. They are pale in the nonpregnant, but in the *eniente* they are purplish red.—Dr. W. R. Lowmann in *Medical Summary*.

CHANGE OF NAME AND EDITOR.

The *American Journal of Dental Surgery* has changed its name to "*The American Journal of Oral and Dental Surgery*." The quarterly has been enlarged and Drs. O. P. Bennett and G. A. Stevenson are the editors. It is quite attractive in appearance and bids fair to grow in interest.

NEBRASKA STATE DENTAL SOCIETY.

The next annual meeting of "The Nebraska State Dental Society" will be held at Fremont, beginning May 17th. An interesting programme is being prepared and every dentist in the State is earnestly requested to be present. Dentists from neighboring States are invited.

H. J. COLE, Cor. Sec'y.

ERRORS.

Several errors of proof were allowed to pass last month which the reader will doubtless correct himself, the most serious being the "endowing of a single dean." "Chair" was meant, page 156, top line. When our typewriter is out the printer suffers, for he it is who cannot decipher our lucubrations in cold "ritin."

THE POST-GRADUATE DENTAL ASSOCIATION OF THE UNITED STATES.

The Post Graduate Dental Association of the United States will hold its annual meeting April 29th and 30th, next, at the Leland Hotel; Chicago, Ill.

Dr. W. C. Barrett, of Buffalo, N. Y., Drs. T. W. Brophy, Louis Ottogy and others, of Chicago, will present essays and addresses. An interesting programme has been arranged and a good attendance is expected. All members of the profession are invited. Graduates of recognized dental colleges may become members by paying membership fee (\$1) and dues for one year in advance (\$1).

R. B. TULLER, President.

L. S. TENNEY, Secretary, 96 State Street, Chicago.

CHARITY.

How much charity work is done by individual dentists? Is it not a fact that few, if any, are willing to spend an hour a week or even once a month in a free dispensary? In order to make itself felt as a philanthropic profession some work must be done alongside our medical brethren to encourage them in their labors of mercy.

CHICAGO DENTAL CLUB.

At the January meeting of the Chicago Dental Club the following officers were elected for the ensuing year: President, A. E. Baldwin; Vice-President, B. S. Palmer; Secretary, E. L. Clifford; Treasurer, E. M. S. Fernandez; Member of Business Committee, I. B. Chrissman. Respectfully,

E. L. CLIFFORD, Sec'y.

DENTAL CARIES.

Decay of the teeth is caused by the action of microbes. The mouth forms a warm bath, in which are realized the conditions of heat and moisture required for the development of the germs which it invariably contains. The bacteria multiply between the fibers and in the organic substance of the dentine, to which they gain access by some opening in the enamel. From this point of view any roughness or little cavity in which fragments of food collect should be treated. Now, though it is possible to effect a relatively satisfactory disinfection of the mouth, this is not sufficient in dealing with anatomical conformations existing from the beginning in the teeth, both in structure and form. It will be necessary to have recourse to the dentists to remove or fill these occasions for decay of the teeth.

—*Daily Paper*.

ENGLAND'S TITLED DOCTORS.

The rapidly succeeding deaths of Sir James Bennett, Sir Morell Mackenzie, Sir George Paget and Sir Oscar Clayton reduce the number of the titled physicians and surgeons in England to forty-nine.

Of these, one, Sir John Tomes, is a dentist, twelve are military surgeons, and two belong to the navy. Seven others are public officials, mostly connected with lunacy and botany, both at home and in the colonies.

Two, Sir John Kirk and Sir Rutherford Alcock, owe their honors to their diplomatic services. Another, Sir Charles Cameron, is a celebrated analyst and chemist.

One veterinary surgeon alone has been so distinguished. He lives at Windsor and doctors the Queen's horses.

The importance of the profession has developed since *Punch* suggested the title of "Lord Deliverus" for the Queen's accoucheur.—*Exchange*.

THE THERAPEUTIC VALUE OF EUROPHEN.

This is a chemical substance obtained by treating carbolic bodies by iodine. It is a very fine yellow powder, insoluble in water and glycerine, but very soluble in alcohol, ether, chloroform, collodion and oil, with an aromatic odor like that of saffron. This powder is sticky to the touch, like rosin; it adheres to the mucous membranes, to the skin and raw surfaces, and is inoffensive.

Therapeutische (Monatshefte, 1891.) have shown that this new substance is very similar to iodoform, and that, like the latter, its principal action is to set free

a certain quantity of iodine: it also resembles it in preventing the growth of microbes that can live without air, and the reductive power of the staphylococcus pyogenes aureus. It furthermore resembles iodoform in checking the secretions and at the suppuration surface of wounds.

In a word, eucrophen has the same chemical and physiological property as iodoform, but it is five times lighter and has also the very appreciable advantage of having no odor.

HAYDEN DENTAL SOCIETY OF CHICAGO.—PROGRAMME FOR 1892.

March 21.—Essayist: A. W. Freeman; Subject: "The Manipulation of Gold for Filling." Discussion opened by C. N. Johnson.

April 18.—Essayist: A. J. Oakey; Subject: "Reflex Nervous. Is Phenomena due to Dental Lesions." Discussion opened by Edmund Noyes.

May 16.—Essayist: J. O. Brown; Subject: "Crown and Bridge Work." Discussion opened by J. W. Wassall.

June 20.—Essayist: Louis Ottofy; Subject: "Pregraduate Study." Discussion opened by R. B. Tuller.

September 19.—Essayist: M. B. Rimes; Subject: "Prosthetic Dentistry." Discussion opened by G. W. Haskins.

October 17.—Essayist: Hugh McNeil; Subject: "Operative Dentistry." Discussion opened by J. G. Reid.

November 21.—Essayist: C. H. Sipple; Subject: "Pathology." Discussion opened by L. L. Davis.

December 19.—Annual Meeting.—Essayist: F. A. Hefner; Subject: "The use of Amalgams." Discussion opened by H. H. Wilson.

RULES FOR THE ADMINISTRATION OF COCAINE.

Dr. Magitot, in the *Repertoire de Pharmacie* for August 10, 1891, formulates the following rules which should govern the employment of cocaine as an anæsthetic:

1. The dose of cocaine injected should be appropriate to the extent of the surface desired to render insensitve. It should not exceed in any case 1 grain to 1½ grains. Each dose should be restricted in large surfaces.

2. Cocaine should never be employed in cases of heart disease, in chronic affections of the respiratory apparatus, or in nervous subjects; and this exclusion applies also to other anæsthetics.

3. Cocaine should be injected into the interior and not under the derm of the mucous membrane of the skin. This is the intradermic method of Reclus, which should be substituted for the hypodermic method. By this means the introduction of a substance into the vein is avoided and the risk of accidents therefore minimized.

4. The injections should always be practiced upon the subject in a recumbent position, and he should only be raised when the operation is to be performed upon the head and mouth, and then only after anæsthesia is complete.

5. The cocaine should be absolutely pure, since as pointed out by Laborde, its mixture with other alkalies forms highly poisonous compounds.

6. Cocaine should be injected in divided doses, with a few minutes' intervals.

7. Suspension of administration, or, as the author terms the method, "frac-

tional injection," renders it possible to guard against the production of sudden symptoms of poisoning.—*Therapeutic Gazette*.

AMENDMENTS TO BY-LAWS OF FIRST DISTRICT DENTAL SOCIETY, NEW YORK.—
PASSED FEBRUARY 9, 1892.

ARTICLE II. SECTION 2. Active members shall be dentists residing in the First Judicial District of the State of New York, holding their membership in accordance with the provisions of Section 13 of the Act incorporating this Society. Also, any person registered as a dentist in the County Clerk's office of the County of New York, and practicing in said county, shall be eligible for active membership in this Society.—*Addition—provided that he be of good character, that he does not conduct his practice by means of the exhibition of dental specimens, appliances or apparatus in a window or in a showcase exposed to public inspection in or out of the office, or by means of public advertisement, or by circulars describing modes of practice, or patented or secret processes, or by the publication of his scale of professional charges.*

ARTICLE II. SECTION 3. Each applicant for admission to active membership must have fulfilled the requirements of Section 13 of the Act incorporating this society, and also all the requirements of the laws regulating the practice of dentistry in the State of New York,—*Addition—and shall have subscribed to the conditions laid down in Article II, Section 2 of these by-laws,*—and each applicant must be endorsed by two members in good standing, and referred to the Executive Committee. Upon their approval he shall be eligible for election at a subsequent regular meeting, and three-fourths of all votes cast shall be necessary to elect.—*Addition—All members of the society shall agree to these provisions of the by-laws.*

ILLINOIS STATE DENTAL SOCIETY.

The following is a partial programme for the Annual Meeting of the Illinois State Dental Society to be held in the Senate Chamber, Capitol Building, Springfield, Ill., beginning Tuesday, May 10, and continuing four days.

- 1st. Annual address by the President, Dr. W. H. Taggart, Freeport, Ill.
- 2d. Report of committee on Dental Science and Literature, by Dr. Edmund Noyes, Chairman, Chicago.
- 3d. Report of committee on Dental Art and Mechanism, by Dr. J. Frank Marriner, Chairman, Chicago.
- 4th. Some Reforms Needed in the Practice of Dentistry, by Dr. James W. Cormany, Mt. Carroll, Ill. Discussion opened by Dr. Wm. Conrad, St. Louis, Mo.
- 5th. Second Period in the History of Dentistry (continued) with Biographical Notes, by Dr. John J. R. Patrick, Belleville, Ill.
- 6th. Crown and Bridge Work, showing casts, models, appliances, etc., by Dr. E. Parmly Brown, New York City. Discussion to be opened by Dr. J. J. R. Patrick, Belleville, Ill.
- 7th. Antiseptic Dentistry, by Dr. Garrett Newkirk, Chicago. Discussion to be opened by Dr. T. L. Gilmer, Chicago, Ill.
- 8th. Dental Legislation, by Dr. E. K. Blair, Waverly, Ill. Discussion to be opened by Dr. Chas. R. E. Koch, Chicago.
- 9th. The Enamel at the Gingival Line, by Dr. Y. E. Weeks, Minneapolis, Minn. Discussion to be opened by Dr. G. V. Black, Jacksonville, Ill.

10th Contour Fillings, What They Should Be, etc., by Dr. Geo. H. Cushing, Chicago. Discussion to be opened by Dr. E. D. Swain, Chicago, Ill.

11th Report of Supervisor of Clinics, by Dr. D. M. Cattell, Chairman, Chicago, with discussions.

Dr. D. M. Cattell, of Chicago, Ill., Supervisor of Clinics has made arrangements for extensive clinics, to which two half days, Wednesday and Thursday mornings will be devoted. The following is a partial list of clinics so far as prepared:

1. DR. J. N. CROUSE—A method of retaining rubber dam in posterior teeth without clamps and insertion of noncohesive and cohesive gold filling in compound proximal cavity.

2. DR. T. L. GILMER—A gold inlay in compound proximal cavity.

3. DR. E. J. PERRY—A method of preparing and placing a molar gold crown.

4. DR. J. W. COLLINS—Insertion of proximal gold filling.

5. DR. J. W. WASSALL—A method of attaching bridges.

6. DR. W. O. BUTLER—A method of manipulation of alloy amalgam fillings.

7. DR. C. N. JOHNSON—Insertion of contour cohesive gold filling in compound proximal cavity, with reference to proper preservation of interdental space.

8. DR. H. A. COSTNER—A method of preparing and filling root canals with tin or gold.

9. DR. W. B. AMES—Manipulation and insertion of phosphate of copper fillings.

10. DR. A. W. McCANDLESS, DAVENPORT, IOWA—A method of producing porcelain-faced bicuspid.

11. DR. T. W. PRICHETT—An idea about amalgam.

12. DR. ———.

It is particularly requested that those having pathological specimens, peculiar cases, models, new appliances and methods, will bring them to the meeting.

The utmost effort will be put forth to make both the Scientific and Practical features of this programme instructive and interesting.

All practitioners of Illinois (including nonmembers) and of neighboring States are cordially invited to attend. They are especially urged to be present at the opening and remain through the entire session.

The usual reduction in Hotel and Railroad rates will be allowed.

J. J. JENNELLE, Chairman Executive Committee.

ON THE ALLEGED BACTERICIDAL PROPERTY OF BLOOD-SERUM.

Dr. A. Gottstein, Berlin, after a thorough examination of the whole literature on the subject, resumes the result he has reached in the statement that our investigations of the bactericidal property of the humors of the living organism, as well of its practical application, are nothing more than initiatory steps. The author communicates an interesting personal contribution to the subject in question. He has investigated the contents of blisters produced by cantharide vesicatory and has found that they possessed strong bactericidal properties. These properties could not reside in cantharidine, the latter failing to show any antiseptic action even in 0.25% solution.—*Therap. Monatsh.*

The first difficulty which one experiences in studying the rotifers, says a writer in the *Archives de Biologie*, is their constant motion. This difficulty is

overcome, according to Masius, by the use of a mixture of methyl alcohol, water, and cocaine in weak solution. After being anæsthetized by this fluid, the rotifers may be fixed without contraction in the ordinary preservative fluids—Fleming's fluid, for example. For the study of the head, an anæsthetized specimen is placed on the slide, and the head cut off in a transverse plan as near as possible to the anterior end. The section thus obtained can be examined easily from any side in water or weak alcohol.

SOMNAL.

From an article by W. Gilman Thompson, M. D., visiting physician to the New York and Presbyterian Hospitals, published in the *New England Medical Monthly*, we make the following extracts, which will doubtless be of interest in estimating the merit of this drug.

After detailing the various experiments and observations which led up to his conclusions, he states that the experiments show that—

1.—The ordinary dose of Somnal—thirty minims for man—may be given by hypodermic injections to dogs, without other effect than drowsiness and slight vertigo and muscular tremor.

2.—A dose of one fluid drachm and a half failed to effect a cat, except in the same manner as the dogs.

3.—A fatal dose of half a fluid ounce stopped the respiration before the heart, and caused congestion of all the abdominal viscera.

4.—The blood-pressure in the arteries of a dog is temporarily increased by somnal, soon returning to the normal.

And his conclusions were as follows:

1.—The effects of somnal are much more striking and certain than those of urethan, and far less depressing than those of chloral.

2.—There is no vertigo or depression after taking somnal, such as may follow the use of sulfonal.

3.—The action of somnal is usually very prompt, and doses of half a drachm, disguised in a little syrup of tolu, or whiskey, are always well borne, easily taken, and entirely without deleterious effect.

4.—The drug, in doses of a drachm, is not powerful enough to decidedly control delirium tremens, maniacal delirium or severe pain.

5.—In doses of thirty or forty minims, somnal is a safe and reliable hypnotic for ordinary insomnia.

So many of the new hypnotics have one or more objectionable features, and their continuous use results in so many new drug "habits," that it is an evident advantage to have another remedy of this class which can be used interchangeably with others if desired, and which seems to be singularly free from injurious effects, and yet strong enough to act promptly and efficiently in ordinary insomnia, not due to intense pain or delirium.—*Phar. Notes*.

OBITUARY.

JOSEPH A. SWASEY, D. D. S.

The following resolutions were adopted at the meeting of the Chicago Dental Society, March 1, 1892:

WHEREAS, The Great Ruler of the Universe has in his infinite wisdom removed from our midst Dr. Joseph A. Swasey.

WHEREAS, It is proper that this society should record its appreciation of his many virtues; therefore be it

Resolved, That in the death of Dr. Swasey this society and the dental profession has lost one of its most worthy and promising members.

Resolved, That this society extend its heartfelt sympathy to the parents of the deceased and that a copy of these resolutions be sent to the bereaved parents and to the different dental journals.

T. W. BROPHY,	} Committee.
F. H. GARDINER,	
D. M. GALLIE.	

Died, at De Funiak Springs, Fla., on March 1, 1892, suddenly of heart failure, L. D. McIntosh, M. D., D. D. S., of Chicago, aged fifty-seven years.

Born in Vermont, Dr. McIntosh was educated both as a physician and dentist, and practiced both professions in his early days in Wisconsin and Minnesota. His mind was inventive and he soon brought out valuable improvements, the first being a uterine supporter, and later the battery which bears his name. Following out this path he gave up practice and for years has devoted his energies to improvements and inventions of a scientific and practical character, resulting in the creation of the extensive establishment of which his was the leading mind, the "McIntosh Battery and Optical Company," of Chicago.

His improvements, as well as his scientific work, have always taken high rank. His battery is in general use throughout the country and has been adopted by the U. S. Government. His milliamperemeter, when submitted to a test in competition with the best French instruments, bore off the palm. His lectures and illustrations before the American Microscopical Society and other leading scientific bodies, have placed him high in the list of investigators. As a histologist and microscopist neither he nor his instruments had any superior and few equals.

At the time of his death, Dr. McIntosh was President of the American College of Dental Surgery, one of the prominent schools of dentistry in Chicago. A man of very frail physique, he struggled against odds, yet by indomitable perseverance and tireless industry, he accomplished a vast deal. His plans were ever developing, and his accommodating and obliging nature led him to assist in many directions, and often to burden himself with tasks and duties which he was quite unable to carry. With his great abilities, he combined a modest and unassuming manner, which was really remarkable, and a gentle and friendly spirit which rendered him beloved and respected by all the large circle of his acquaintance, and greatly endeared him to those who knew him most intimately. Stricken down suddenly, with scarcely a note of warning, the manner of his death, while undoubtedly painless to himself, was shocking to his family and friends. He left Chicago Feb. 27th for a little trip of recreation, apparently in his usual health, and had but just arrived in Florida when he was called hence.

Dr. McIntosh was a soldier during the war of the rebellion, and a member of the Grand Army of the Republic. He labored under physical disabilities contracted during the service.

His loss will be felt, not alone by the surviving family, consisting of a wife and two daughters (the elder Miss Rebecca McIntosh, D. D. S.), and by the business house with which he was connected, but by a wide circle of friends and in many circles everywhere. A more sincere, faithful or a truer man never lived, and his works will live after him.

"None knew him but to love him,
None named him but to praise."

C. S. S.

George Claudius Ash, the oldest son of Claudius Ash, of the well known dental manufacturing firm of C. Ash & Sons, died in London, January 17, 1892.

Dr. Noah Porter, a former President of Yale, and a noted writer and educator is deceased.

THE DENTAL REVIEW.

VOL. VI.

CHICAGO, APRIL 15, 1892.

No. 4.

ORIGINAL COMMUNICATIONS.

MECHANICAL TREATMENT OF CONGENITAL FISSURE OF THE PALATE.*

BY GRANT MOLYNEAUX, D. D. S., CINCINNATI, OHIO.

In presenting this paper on the mechanical treatment of cleft palate, I have deemed it advisable to precede the description of the appliance with a reference to some conditions that exist during vocalization, with a normal and abnormal palate ; in order to better understand the principle upon which the construction of an appliance for the treatment of abnormal palate is based.

For perfect and pure enunciation it is necessary, other things being equal, that the cavity of the nose be perfectly separated from oral and pharyngeal cavities except for the sounding of the two consonants M and N.

This separation under normal conditions is effected by the soft palate acting in conjunction with the superior constrictor muscle of the pharynx.

In congenital fissure of the palate, which is the only lesion that can properly be called cleft palate, we have a permanent communication between the oral, pharyngeal and nasal cavities, and consequently impaired speech, the degree of which depends largely upon the character and extent of the fissure.

The treatment consists of substitution in line of the fissure, of various formed appliances, by which we can utilize such muscular action as is available to close and open the posterior nares during vocalization.

As there is a diversity of opinion as to the principle upon which

*Read before the Mississippi Valley Association of Dental Surgeons, 1892.

this closure is effected, it will be necessary to consider the anatomy of these cavities, and muscular action, before we can determine upon a definite basis of treatment.

In the normal palate we have a soft elastic curtain, projecting from the hard palate, composed of, and actuated by, the levator and tensor palati muscles, the palato-pharyngei, palato-glossi, and azygos uvulæ muscles.

When it is necessary to vocalize any letter except M or N, the soft palate is extended posteriorly to meet the posterior wall of the pharynx, which is, by the contraction of the superior constrictor muscle of the pharynx, moved forward.

This extension of the soft palate posteriorly is caused entirely by the action of the palato-pharyngei muscles, and as the soft palate strikes the wall of the pharynx its lower edge is turned forward, thereby presenting a convex nasal surface to the pharyngeal wall.

This simultaneous action, of the palato-pharyngei acting on the soft palate, and the contraction of the superior constrictor of the pharynx, closes the posterior nares as in swallowing.

Now, when the expired air is thrown into vibration and a tone produced, the tensor and levator palati muscles are called into use, their function being to straighten and make tense the palate by pulling against each other latterly; this tension being possible only when the palate is intact, and drawn backward by the palato-pharyngei muscles.

This tense palate, which might be likened to a drum head, is now capable of entering into a sympathetic vibration and adds quality to the tone produced.

Beside the tension and straightening of the palate, the only other function of these muscles, the levator and tensor palati, is to dilate the eustachian tube, and in no wise can they by an elevation close, or cause to be closed, the posterior nares.

By a closure of the posterior nares and tension of the palate, the mouth is formed into a resonating chamber for all sounds save M and N, and is capable of alterations in length, breadth and depth, to afford a suitable resonance for each tone.

For illustration :

A as in ah, oo as in boot—the larynx descends and the lips are projected, lengthening the resonating cavity to the utmost, and is estimated at about four inches; I as in it—the larynx is raised, the

lips drawn tightly over the teeth, and the cavity is shortened to its shortest diameter, about two and three-fourth inches.*

"The enunciation of the vowels is dependent upon an alteration in the size of the resonating cavity, which gives a definite resonance at all times for the same vowel sound."*

The position of the "lips," "tongue," and "larynx" determines the size of the resonating cavity, and while these are constantly changing position, the superior constrictor of the pharynx maintains nearly a uniform contraction; the purpose of which is to assist in closing the posterior nares.

Another point worthy of notice is that the vowel sounds can be distinctly enunciated without a perfect closure of the posterior nares, though for purity of sound it is better that it should be closed.

When there is fissure of the palate we have a condition widely different from those just stated. The division in the median line of the soft palate establishes a permanent communication between the nose, the mouth, and pharynx, making articulate speech impossible, while the tone of the voice is flat and exceedingly disagreeable.

The tensor, and levator palati muscles have lost their functions, and the palate can be made neither tense nor straight. On the contrary, by virtue of the palato-pharyngei, which are fully developed, the palate is pulled downward and at the same time is drawn backward, and the termini of the uvulæ brought nearer each other so as to touch at times.

The superior constrictor of the pharynx is also as fully developed as normally, and in every effort to swallow, or enunciate, it exhibits the same uniform contraction as with the normal palate.

Dr. Wm. Süersen, Sr., of Berlin, was the first to call attention to the action of this muscle, in connection with treatment of cleft palate, and based the construction of his appliance upon it.

When you consider how impossible it is to use any other muscle to effect a mechanical closure of the naso-pharyngeal opening, it will be seen that all appliances, no matter of what form or composition, if successful, depend upon the action of the superior constrictor of the pharynx.

Dr. Süersen deserves the credit of bringing to notice the possibilities in treatment of cleft palate, when the appliance was so con-

* Helmholtz.

structed as to obtain the full benefit of the natural action of this superior constrictor muscle.

The clinical features of cleft palate are by no means uniform.

Clefts vary from a simple split in the soft palate, to various extents in the hard palate, and sometimes pass entirely through the soft and hard palate, with complete loss of the intermaxillary bone, and the four incisor teeth.

They are also of various widths, the narrowest being about one-fourth of an inch between the approximating edges of the extremity of the soft palate, and the largest about one and one-fourth inches wide.

The pharynx also varies in size, ranging from three-fourths of an inch to an inch and three-fourths in width, and is frequently larger on one side of the median line.

The distance between the opposing pillars of the fauces, or opposite the tonsils, varies in different individuals; as also does the distance between the terminus of the soft palate, and the posterior pharyngeal wall.

As regards their ability to speak intelligibly, we find that patients exhibit the greatest difference, this depending upon conditions just observed and the intelligence and pride of the patient.

We have what we might call favorable and unfavorable classes.

The favorable class; patients fairly intelligent, narrow fissure extending only through the soft, or partly through the hard palate, narrow between the tonsils, and narrow pharynx, and a long soft palate.

The unfavorable; the unintelligent, and who lack pride, with extensive fissure, wide at the tonsillar region, wide pharynx, deformed lip, and a short soft palate.

Patients of the favorable class, by a well-trained tongue will acquire many articulate sounds, though the voice will show the lack of resonance.

In the unfavorable class, a and e, m and n, are the only articulate sounds.

There is no uniformity in the speaking ability of different patients, but the average case will sound the vowels so they can be understood, while the consonants will assume the vowel sound with which they are associated.

For illustration — B P C D G T V and Z will sound as E long;

J K and H as A in hate; L F and S as E in net; and R sounds as ah.

But, if these letters are used before or after the long or short sounds of the vowel, they will assume the character of the vowel tone.

It can now be observed that during ordinary conversation the quality of the voice depends upon the proper resonance to the vowel tone, while articulation is the result of a constant opening and closing of three valves.

These valves are the labial, formed by opening and closing the lips, as in B and P; the lingual, formed by the tongue against the teeth, as in D and T; and the naso pharyngeal, which closes for all sounds save M and N.

In mechanical treatment of cleft palate, it is necessary to establish an artificial valve that can close the opening into the nose at will.

This can only be accomplished speedily, definitely, and for all classes of cases, by constructing an appliance that will fill the fissure in the palate, at the same time projecting above and beyond the soft palate, into the pharynx and of such dimensions that the natural contraction of the superior constrictor of the pharynx will meet the appliance and form a joint with it.

With this accomplished we turn our attention to the training of the patient, which should be of a rational character, calculated to develop melody and articulation at the same time, and as quickly as possible.

The vowel sounds are the musical tones of the voice, and as they require no trained use of the tongue or lips and can be uttered distinctly with some air passing the nasal cavity, they become the best sounds with which to begin training.

The practice of these tones should be associated with the proper tone of some musical instrument, preferably the piano.

To this end I have adopted a course of training based upon the theory of Dr. Helmholtz. He has found that the cavity of the mouth gives a definite resonance for all sounds, and this independent of age or sex.

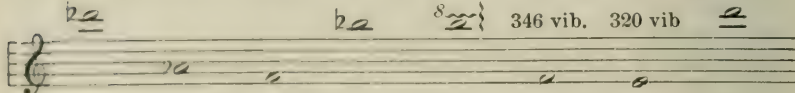
"The same resonance being found in man, as in women or children."

After obtaining the scale of resonances, I have reduced them to the compass of vocalization, and with the letters arranged to the

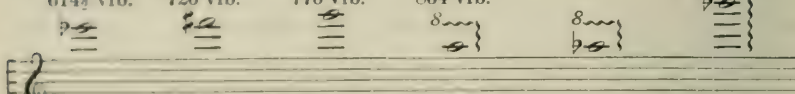
proper notes and variously transposed, turn the patient over to a music teacher. 1 F. (†).

TABLE.

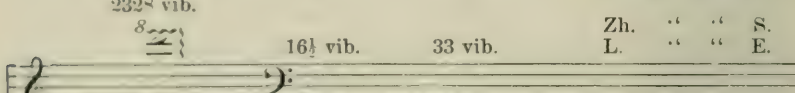
Ah.	O.	oo.	A.	E.	P.	B.	G.
							582 vib.



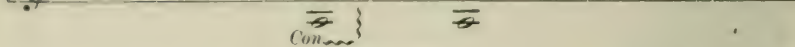
K.	D.	T.	F.	V.	S.
614½ vib.	726 vib.	776 vib.	864 vib.		3666 vib.



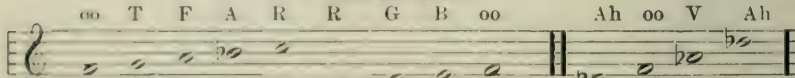
J and Ch.	(Guttural.) R.	(Lingual.) R.	Sh. same as J.
232 vib.			



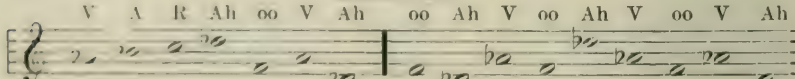
	16½ vib.	33 vib.	Zh. " " S.
			L. " " E.



EXERCISES.



EXERCISES.



AIR. (Familiar.)



The pupil of music now takes various exercises with the vocal tones, having them arranged in every conceivable manner, but always giving each vowel its definite tone.

The second exercise consists of the vowels, and the liquids L M N and R, because these rank next to the vowels as regards the difficulty of pronunciation.

Following these are the palatals K H G Y, always giving the aspirate first, the subvocal last.

Next are the labials ; aspirates first P F Wh—B V W last.

The linguo-dentals form the last series and are the most difficult tones to acquire on account of the cumbersome and unwieldy tongue. These are

Aspirates	Subvocal
T	D
Th	th
ch	J
S	Z
sh	zh

The reason for giving the aspirates first, is, that they are only emissions of breath articulated and can be produced while the patient holds the superior constrictor muscle contracted on the appliance.

This voluntary control of the superior constrictor muscle soon becomes involuntary and the subvocal tone forms itself.

If the order is reversed it requires much longer to arrive at the same result.

By pursuing a method similar to the above our patient improves the quality of the voice and at the same time acquires a training of the tongue and lips.

If, on the other hand, the patient begins with elocutionary training, valuable time is lost, owing to his inability to use a cumbersome and overgrown tongue, as this organ must be dressed down to a working condition before any real progress can be made.

By the confusion of the tones of the piano with the voice, the imperfect articulation is not so noticeable, and the patient's mind is diverted from the real object, that of trying to utter some definite sound; and a difficult task is made easier and progress more rapid and encouraging.

After a month or two of musical training, the teacher of elocution will be of great service.

The training now should follow the same line as that prescribed in the musical course, vowel sounds followed by short words formed of the vowel letters, and the consonants L M N R K G H Y, taking up the other letters as rapidly as the patient can acquire them.

The most difficult sounds for a cleft palate to acquire are those words ending in st, dst and sts.

I have obtained a verse with these sounds from Prof. Pinkley, which is an excellent exercise, and is as follows:

"Amidst the mists and coldest frosts"

"With stoutest wrists and loudest boasts"

"He thrusts his fists against the posts"

"And still insists he sees the ghosts."

This is a difficult task for many persons with a normal palate, and when it can be spoken distinctly with cleft palate, everything in the way of conversation is possible.

The condition of harelip, which is usually associated with cleft palate, also plays an important part in the training of the patient. If this is united late in life the lip is sometimes so shortened that it is difficult to bring it in contact with the lower as in pronouncing the labials; these letters then become more difficult than the linguo-dentals.

This method of training, musical first, and elocutionary second, to which I have but briefly referred, is one of the important features of the treatment of cleft palate; and when followed up carefully, is productive of the most immediate and satisfactory results, provided the appliance is so constructed as to meet the requirements.

The principal requirements are, stopping up of the fissure in the palate, and the pharyngeal cavity except the space left by the contraction of the superior constrictor muscle of the pharynx.

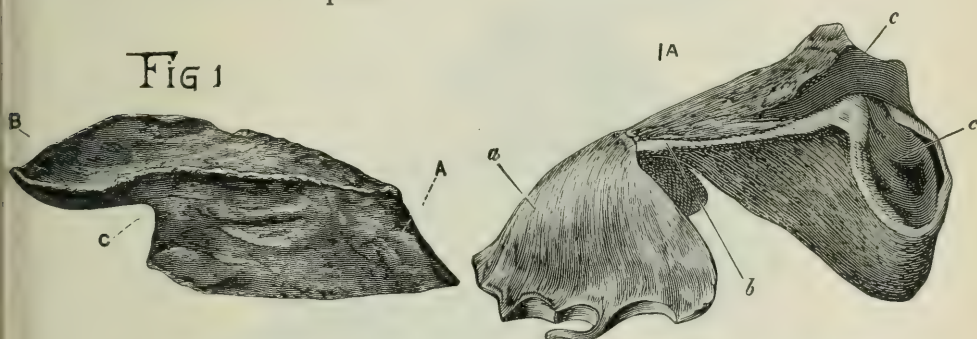
Secondly,—that the appliance must extend sufficiently low in the pharyngeal cavity, that the dorsum of the tongue can pass firmly against it in swallowing, or as in sounding K.

This can only be accomplished by measuring accurately the size and form of the oral, nasal, and pharyngeal cavities, and their relation to each other; how to do this, I will explain later on.

Figure 1 represents what is known as the Kingsley Flexible Rubber Velum, and Figure 1 A, the Süersen Obturator.

For convenience I have divided the appliance into three parts: Fig. 1, C to B, pharyngeal portion; below C to A, the palatine portion, and above C from C to A, the nasal portion. Dr. Kingsley says: "Simplicity has gone one step further to remove the pharyngeal portion," disposing of the most essential characteristic.

That portion of the appliance anterior to the pharyngeal portion, is only to stop up the fissure of the palate, separating the mouth from the nose; while the pharyngeal part is for the purpose of separating the posterior nose from the pharynx, and is accomplished by the contraction of the superior constrictor muscle meeting the edge of this pharyngeal part, and not by the action of the muscles of the palate.



It is a strange fact that while so much is claimed for this pharyngeal portion, none of our writers give us any idea of how to obtain its proper size and shape.

We are told how by most intricate processes to get an impression of the floor of the nares, a part that is of no service with any form of appliance.

Dr Süersen is the only person who mentions the necessity of taking an impression of the pharyngeal cavity. His method was to vulcanize an ordinary plate and upon a bar projecting from a plate into the pharynx, build gutta-percha until he had filled the cavity.

This operation required about two weeks, at various sittings, to obtain the marking of the pharyngeal cavity.

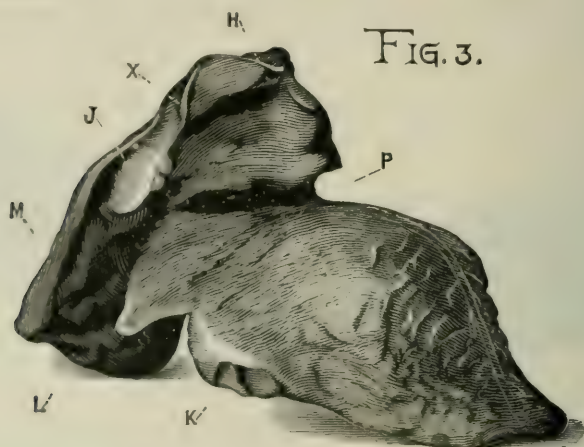
When the cavity was so full that M and N could not be sounded he trimmed the gutta-percha from the posterior until these letters

were possible. This gutta-percha bulb was then duplicated with vulcanite, making the plate an obturator in one solid piece, as Fig. 1 A.

After deciding that the superior constrictor of the pharynx was the only muscle that could be utilized in conjunction with an appliance to close the posterior nares, I determined to note the action of this muscle in speaking.

After a series of experiments on normal and abnormal palates, I found that the contraction of this muscle was nearly uniform in the pronunciation of the various letters.

The point now was to measure this contraction and its relation to the fissure.



Just back and below the eustachian tube is an enlargement, or bean shaped elevation, which is represented by the depression marked J in Fig. 3.

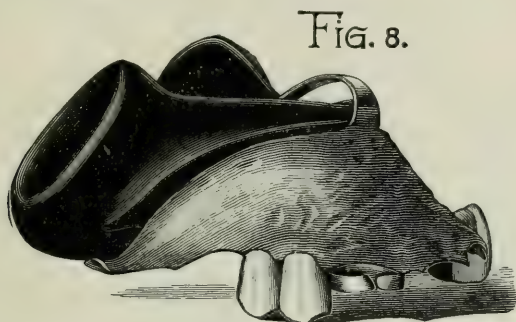
Underneath this elevation is a fissure, sometimes quite deep, which permits the air to enter the nasal cavity at the side of an appliance such as Fig. 1, and prevents its successful working.

Dr. Sørensen has stated that it is always best, to insure uniform results, to extend the appliance over this soft elevation.

The impression, which is to be an accurate guide to the construction of an appliance, should represent these elevations at the eustachian tube above with an imprint of the dorsum of the tongue below, and the size of the pharyngeal cavity during the contraction of the superior constrictor of the pharynx; and these in exact re-

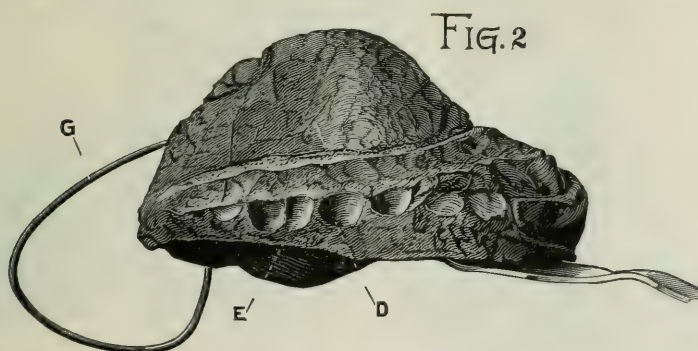
lation to the fissure in the palate and the palatine surfaces of the teeth. Such an impression is represented in Fig. 3.

My first operations according to this method were made of flexible rubber, and appeared as Fig. 8.



The wearing of such extensive appliances of flexible rubber, seem to excite so many disagreeable symptoms such as redness, soreness, and excessive mucous secretions, that I was compelled to abandon its use, substituting hard rubber.

With the use of hard rubber these symptoms disappear, and from the fact that there is no soreness nor nausea, and that the mucus can be removed by the usual method, and that enuncia-



tion of all letters is an immediate possibility, I feel convinced of the correctness of the theory.

DESCRIPTION OF APPLIANCE.

The appliance with which I have been most successful is a modification of the "Süersen" which I have tried to represent by the attached illustrations.

These modifications do not in any way detract from the value of the original "Süersen," but have been added to simplify its construction and at the same time get rid of many disagreeable features that it possessed.

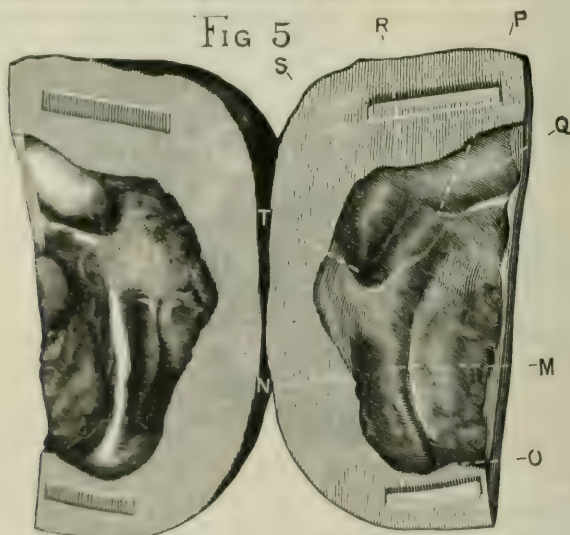
Fig. 2 represents the impression tray with wire in position for taking the pharyngeal impression.

The body of the impression tray is of modeling compound and follows the outline of the palate, extending into the fissure as far as the terminus of soft palate, but touches no part of the mouth except the cutting edges of the teeth.

This enables me to place the tray in the mouth as many times as I desire while taking the pharyngeal impression with assurance of always having it in the same position.

The pharyngeal impression was a difficult matter until I hit upon the wire.

This is bent to the general outline of the pharynx and is about one-fourth inch from the posterior and lateral walls.



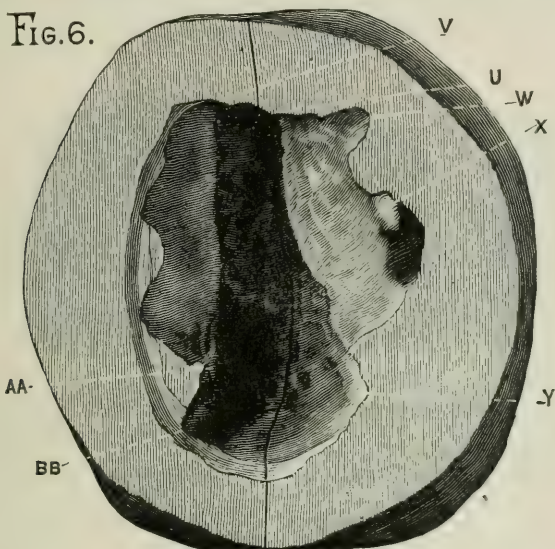
It extends low enough to touch the tongue in swallowing, and is twisted and fastened in the modeling compound above and behind the soft palate.

Fig. 3 represents the impression; one molar tooth is shown, the others being fractured away in separating from the model.

Fig. 5 represents the divided model; the teeth have been re-

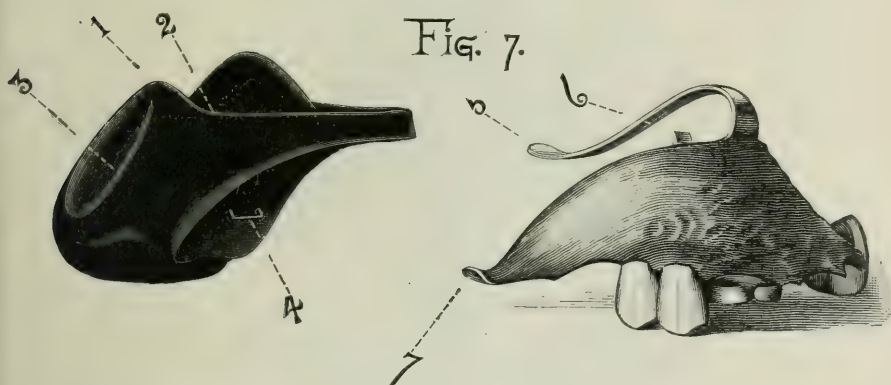
moved. R, the posterior wall of the pharynx during contraction of the superior constrictor.

T, eustachian tube.



S, the bean-shaped elevation back and below the eustachian tube.

P, terminus of soft palate.



M, hard palate.

Turn the dotted line N over to the other half of the model and it will point to a turbinated bone.

U, the anterior extremity of fissure, three-fourths of an inch

wide, between the approximating borders of the clef, intermaxillary bone, and four incisor teeth.

Fig. 6, the same model closed.

X, molar tooth : W, first bicuspid ; V, cuspid broken away.

FIG. 9.

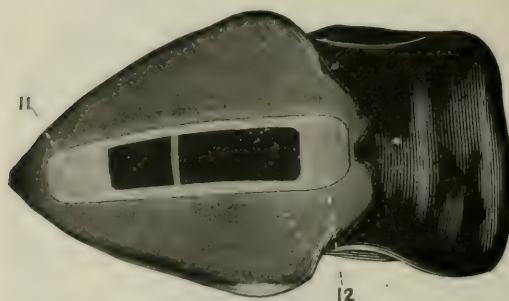
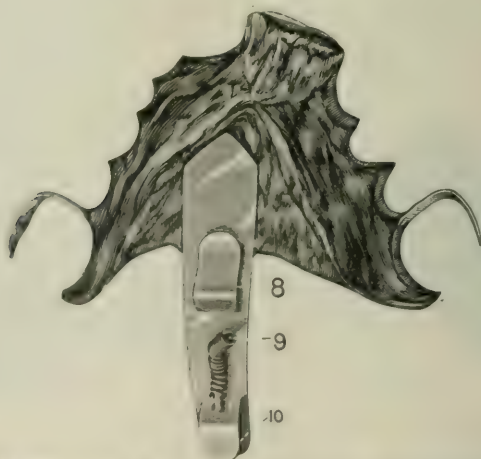


Fig. 7, one form of retaining plate, with obturator detached.

By the spring (gold) 5 the obturator is allowed a compensatory motion, but is quickly thrown into position when the muscles are relaxed.

FIG. 10



The lug (6) prevents the obturator from being displaced while in the mouth.

The staple (4) receives a gold bar from palatine surface, which holds the obturator on the proper plane.

Fig. 8, the appliance complete.

Fig. 9, this represents another form of attachment, used when the fissure does not extend entirely through the hard palate.

Fig. 10, represents the retaining plate and the spiral spring, which readjust the obturator when not in use.

FIG. 11.

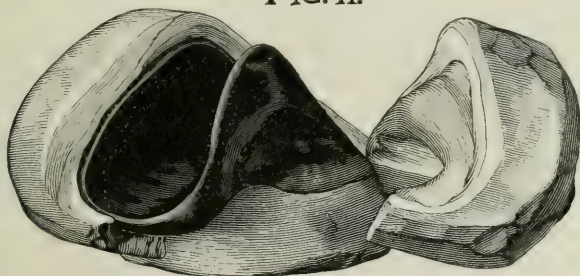
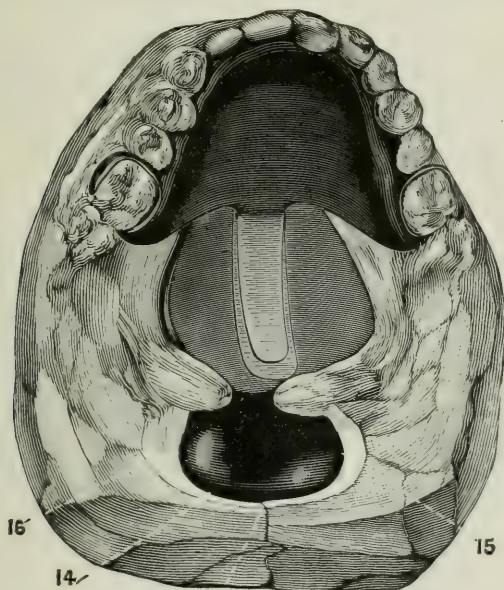


Fig. 11, this shows the manner of making a mould in which the obturator is vulcanized.

The last figure (not numbered) shows the appliance in position on the model as in the mouth.



These obturators are not made hollow but in the form of a thin shell with upper part removed.

The reason for this is that if the appliance has a horizontal nasal surface, or convex, the mucus collects upon the appliance and can only be removed by taking it from the mouth.

If left open and the edges turned slightly toward the median line, the mucus is confined to the narrow space between the appliance and living tissue, and can be removed by the ordinary methods.

By making the appliance detachable every part can be kept clean easily and repairs if necessary, can be proceeded with as in a simple case.

RECREATION AND THE CONSERVATION OF ENERGY.*

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILL.

GENTLEMEN: In casting about for a subject which might be appropriate for an after-dinner speech or address it occurred to me that a nonpractical and nonscientific topic for once could be relished as a wind-up for this most enjoyable occasion. The subject of recreation for professional men has received but sparse treatment from those best fitted to handle it. All my life long I have been a busy boy and man and it is only in recent years that I have felt the necessity of taking recreation for the body and the mind. The struggle for existence, for riches, for fame, for the good of mankind, or for the State is generally in the thought of most of us from the moment we are cut loose from the ties of home or the parental roof. Unless the youth seeking his fortune is carefully educated and trained before he enters the arena of life, he has little thought of the conservation of energy in his early and sometimes bitter struggles for recognition. For proof of this I refer you to the early decay of physical and mental activity in the newer cities and countries and to the great mortality among the ceaseless toilers, both men and women breaking down under the labors that ambition for distinction entails. The constantly active brain or the overtaxed physique, no matter how perfect in the beginning, must become worn out unless occasionally shut down for repairs or closed in order to take stock. Most of you are on the threshold of professional life, some, like myself, nearing the middle period of existence, but none too old not to stop and ask of himself how best can I conserve energy for future work and usefulness?

Some one has said that it is not overwork that kills, but it is

*Read before the Odontographic Society, of Chicago.

the indulgence of passions and appetites, the use of stimulants, and the abuse of hours which should be devoted to recreation, sleep and other forms of rest for the mind and body. Overuse of any portion of the body, the arms, the legs, the eyes or stomach will as surely result in bodily weakness as over use of the mental faculties will result in defective memory, lack of logic in argument and failure of ability to reason or study well any subject undertaken for the instruction or entertainment of others. Conserve your energies, do not overtax your strength; in other words recreate. Says the immortal Cervantes: "Human nature or human frailty cannot subsist without some lawful recreation."

The bow thats always bent will quickly break,
But if unstrung will serve you at your need.
So let the mind some relaxation take,
To come back to its task with fresher heed.

—*Phaedrus*.

RECREATION.

Recreation is intended to the mind as whetting is to the scythe, to sharpen the edge of it, which otherwise would grow dull and blunt. He, therefore, that spends his whole time in recreation is ever whetting, never mowing; his grass may grow and his steed starve; as, contrarily, he that always toils and never recreates is ever mowing, never whetting; laboring much to little purpose. As good no scythe as no edge. Then only doth the work go forward when the scythe is so reasonably and moderately whetted that it may cut, and so cut that it may have the help of sharpening.—BISHOP J. HALL.

The great men among the ancients understood how to reconcile manual labor with affairs of state, and thought it no lessening of their dignity to make the one the recreation of the other.—LOCKE.

He that will make a good use of any part of his life must allow a large portion of it to recreation.—LOCKE.

R. Ascham.—Toxophilus.—For as man's wit fore-occupied in earnest study, *must* be as well recreated with some honest pastime as the body, fore-labored, must be refreshed with sleep and quietness, or else it cannot endure very long, as the noble poet saith: "What thing wants quiet and merry rest, endures but a short while."

Thomas Fuller. Recreation is a second creation, when weariness hath almost annihilated one's spirits. It is the breathing of the soul, which otherwise would be stifled with continued business.

Sam Slick: Employment gives appetite and digestion. Duty makes pleasure doubly sweet by contrast. When the harness is off, if the work ain't too hard, a critter likes to kick up his heels.

Cæsar mistrusts Cassius because that lean conspirator "loves no play, as thou dost Anthony, he hears no music, seldom he laughs."

REASONS FOR RISIBILITY.

I've seen a Bishop dance a reel,
And a sinner fast and pray
A Knave at top of fortune's wheel,
And a good man cast away.

Wine have I seen your grave ones quaff,
Might set our fleet afloat;
But I never heard a hearty laugh
From out a billains throat.

Izaak Walton says of the complete Angler that in writing it he made a "recreation of a recreation."

Dr. Robert South. The pleasures of Amusement and Industry compared. Nor is that man less deceived that thinks to maintain a constant train of pleasure by a continual pursuit of sports and recreations. The most voluptuous and loose person breathing, were he but tied to follow his hawks and his hounds, his dice and his courtships every day, would find it the greatest torment and calamity that could befall him; he would fly to the mines and galley for his recreation, and to the spade and the mattock for a diversion from the misery of a continued unintermitted pleasure.

When to myself I act and smile,
With pleasing thoughts the time beguile,
By a brookside or wood so green
Unheard, unsought for, or unseen,
A thousand pleasures do me bless,
And crowds my soul with happiness.

—Burton's Abstract of Melancholy.

On the instruction of youth. By which means our very exercises and recreations, running, wrestling, music, dancing, hunting, riding, and fencing will prove to be a good part of our study. I would have his outward fashion and mien and the disposition of his limbs formed at the same time with his mind.—MONTAIGNE.

He that sinks his vessel by overloading it, though it be with gold and silver and precious stones, will give his owner but an ill account of his voyage.—LOCKE.

Industry is the natural sure way to wealth, this is so true that it is impossible an industrious free people should want the necessities and comforts of life, or an idle enjoy them under any form of government.—BISHOP BERKELEY.

Dr. Beattie on the law of nature. And from every mental energy that is not attended with pain, and even from some of those that are, as moderate terror and pity, a sound mind derives satisfaction ; exercise being equally necessary to the body and the soul, and to both equally productive of health and pleasure.

It must always be remembered that nothing can come into the account of recreation that is not done with delight.—LOCKE.

Nor is that man less deceived that thinks to maintain a constant pursuit of sports and recreations ; for all these things, as they refresh a man when weary, so they weary him when refreshed.

—SOUTH.

Let not your recreations be lavish spenders of your time, but choose such as are healthful, recreative, and apt to refresh you, but at no hand dwell upon them.—JEREMY TAYLOR.

Against too much recreation the immortal bard of Avon says:

“If all the year were playing holidays, to sport would be as tedious as to work.”

The learned Francis Bacon, in “Studies,” says recreations, of study, “serve as delights” to the mind.

From these excerpts taken from the thoughts of the (witty,) learned and the great, a lesson is to be learned whose application must be made to the ones most interested. It is not possible to become useful members of society, to grow in public esteem, to be philanthropic or esteem yourselves if the whole of life is to be devoted to the pursuit of pleasure, but it is a necessity for great deeds and great works to be evolved from communing with nature. To be ever dwelling in closed closets, hidden from the view of the world, never did and never will paint the beauties of the landscape, describe the flowers and plants of the earth, scale the mountain heights, explore new or savage countries, or construct bridges, railroads or other evidences of the versatility of man. Therefore I beg of you to make your life-work a pleasure, by indulgence in proper and fit recreations, reading, music, study of books and authors, engage in out-of-door sports, in experiments for the benefit of mankind. Move through the world with the fewest thoughts of envy, none of malice, all of things that are noble and soul inspir-

ing, giving a helping hand to your less fortunate brothers and ever keeping in mind this thought: That to do the most good to humanity, which includes yourselves, you must recreate and conserve your energies in order that your personality shall make its impress on coming generations.

FAILURES OF DENTAL OPERATIONS.*

By E. D. SWAIN, D. D. S., CHICAGO, ILL.

In looking for the definition of the word "fail" I find it given "to be wanting"—"to fall short—to be deficient in any measure or degree up to total absence—to cease to be furnished in the usual or expected manner, or to be altogether cut off from supply." Furthermore the paragraph seven says, to come short of an object aimed at or desired; to be disappointed of access or attainment.

Therefore you perceive that the scope allowed me is considerable, and should this essay prove "deficient even into total absence" in general interest and instruction, charge it up to the dictionary and the broadness of the definition. Just how your committee chanced to give the subject I was supposed to write upon, as "Failure in Dental Operations," I am at a loss to conceive, for I told them my subject would be "Dental Failures," which you observe gives me a still broader field, allowing me to criticise operations upon the teeth or such other acts in our practice "as cease to be furnished in the usual or expected manner" from my point of observation.

I shall endeavor to consider the following subjects:

What ought our patrons to expect from the operations of tooth filling? Causes of some failures! Use of burs in the engine in the preparation of cavities and some thoughts regarding plugger points used, and a word or two upon ethics.

The first question should perhaps have a little broader scope, and in fact we may assume that it has, than mere operations upon the teeth, and state first that they have the right to expect their dentist to deal with them in a strictly honest manner, and never so conduct himself as to convey to the mind of the patient that he is "making holes" for the purpose of filling and thereby increase the size of his bill and volume of his business. I have too much faith in the honesty of my profession to believe that this is often done;

*Read before the Chicago Dental Society.

at the same time, people in whom I have as much faith as I have in my professional brethren, frequently make this charge, and visible conditions sometimes lead one to infer that the patients are correctly suspicious. They have the right to expect that the dentist shall use every means in his power by reading, associating with his fellows and a free interchange of thought upon all questions that he may first of all be able to correctly diagnose the diseased conditions presented, or, if not able to do so, to have sufficient honesty to so tell them; furthermore, he should not possess that jealous suspicion of his brother, whom he knows would be able to help him were he called upon, and so deprive the patients of needed knowledge as to their condition.

The characteristics of teeth vary greatly; the experienced dentist recognizes at a glance those which once filled are no longer a source of revenue to him; as he does those teeth in which even the most skillfully performed operations, are but temporary and which in time will need refilling.

When he *warrants* operations or fails in any of the above requisitions, he makes not only a failure of his professional integrity but of his operations as well. I do not care to discuss the question as to whether soft or cohesive gold should be used, hand or mallet pressure, all gold and no amalgam, beyond the statement that the dental practitioner who does not use all of them, as indicated, makes a deplorable failure and the practitioner who sees no good in a saved tooth, because its salvation was accomplished with a material other than gold, to my mind fails to comprehend his true mission in the profession he has chosen. I well remember cases in the earlier years of my own practice, whose ghosts haunt me now where failure of judgment, failure to use gutta-percha, oxychloride of zinc, or amalgam, cost my patient their natural organs and caused me the mortification of knowing that another failure was charged against me. Contour fillings of gold are good, and the theory that all teeth filled should be restored to their original pristine beauty in form, etc., *sounds* good certainly, especially as it is sometimes elaborately described to us by gentlemen competent to talk upon such subjects. Still every one of you have seen the most outrageous failures from this source simply because the operator was proud of the fact that he could make a beautiful filling in a very frail tooth; deplorable failure in judgment as well as the service rendered.

Within a year I met a man and brother dentist who has been in practice counting his college experience not more than five years, who after some general conversation upon dental operations, said I have seen some of your operations recently, made several years ago, and could not help criticising them. I asked in what respect, the reply was "you cut away too freely." I asked if the operations were saving the teeth? He replied, "Yes, I found only one which required a slight repair at the cervical margin." He then volunteered the information that in those bicuspsids and molars where the dentine had been destroyed by disease, leaving the enamel standing, he tried to preserve that rather than cut it away, thereby exposing so much gold. My word for it, if this man continues in practice he will have some failures which will annoy him and cause his patients to speak after the manner of men, as forbidden in the fifth commandment.

Prof. Black has recently, in a series of articles in the *Cosmos*, given us advice upon the preparation of enamel edges, which if followed would save us many failures in this direction.

Another *growing* cause or failure, arises from the indiscriminate use of the dental engine and burs in the preparations of cavities for filling; I have seen so many instances where the cavity was the shape of a round bur, the enamel edges so thin that the most delicate manipulation with the finest instruments could not prevent their fracture, also in many localities it would be impossible to pack the gold into the undercuts so made. I have always feared the use of the bur in deep cavities, or in those where it was dangerous to cut to any considerable depth, the hole being filled with the fine cuttings of the dentine, making it next to impossible to know what one is doing.

Recently two sisters applied to me for advice regarding their incisor teeth, which were considerably discolored, the usual tests convinced me that the pulps were dead. I removed some of the fillings verifying my diagnosis in this direction and finding the cavities formed as I have mentioned above, when burs were used. I commenced a course of questioning, which proved to me that these cavities were wholly prepared with burs, and that in each instance an exposure of the pulp was the result, consequently abscesses, discoloration and disfigurement.

A prominent dentist and careful operator in my office recently remarked "that some operators seemed to feel that they knew

just where to look for a pulp canal and seemed to think that when necessary to open them for treatment, they could with a very fine drill and the engine, go through the crown and hit them every time ;" his experience had been however, that they as often went through the side of the root, through between the roots at the bifurcation, or at some other point, endangering the chances of saving the tooth. This is even a greater failure than those already mentioned, arising from too free use of the dental engine. Another dentist present, a teacher, suggested that students should not be allowed the use of the engine during the first two years of their pupilage. Another, a Professor in one of our Dental Schools, not willing to go quite so far, was of the opinion that more attention should be given this subject in the education of dental students. I do not condemn the use of the engine, or burs, instead I find them very valuable aids, but if we would avoid such failures as mentioned, we should use great care and discrimination when we do use them.

Another source of many failures I believe arises from the use of deeply serrated gold packing instruments. It can be readily understood, that where comparatively large pellets are used, the long sharp points pass entirely through, and not only fail to pack the gold against the walls of the cavity, but even pulverize them, leaving under the gold a layer of chips of dentine, thereby preventing the possibility of a moisture proof filling ; and furthermore I have come to believe that much of the discoloration seen beneath thin walls, especially in incisor teeth, is due to the failure to remove all the dust produced by preparing the cavity.

Why do we speak of recurring decay about a filling of years standing as a failure, especially if that tooth has been filled with gold? Has this material properties in its pure metallic state which will prevent caries of the teeth? It is not antiseptic, and only answers the purpose best because it is soft and can be coaxed to remain in place when once fixed, if properly done ; excluding moisture, particles of food and decomposable secretions which are always present in the mouth, the same conditions exist, the same tooth is composed of the same materials, weakened in its powers to resist diseased conditions now because of the disease infecting it years ago ; to convey the idea to our patient that a tooth once filled with gold, is in the future safe from further disease, is one of our greatest failures as professional men. Did you ever hear of a physician assuring

his patient that when he had once mastered the present attack, they would be exempt from similar ones in the future? That a bone once healed would never break again?

Is it not true that one has to grow old in practice, before he has the courage to say to his patron, "little of the work I do for you can be pronounced other than temporary, and in proportion as your teeth are now liable to caries will these operations require to be repeated;" here we fail in courage.

It seems to me further that the profession, and especially those of its number who are teachers in our Colleges, are failing in one particular at least, to elevate our calling by impressing upon the minds of the young men the fact that, as men of one calling, to each and all is due a courteous, truthful and honest difference, or what we have learned to call ethics. Ethics does not consist simply in subscribing to a code, that we will not do certain kinds of advertising; will not underbid our neighbor in prices; or will not try to convey the idea that our work is better than his. Ethics rather relates to the manners and habits or moral nature of man; it is the science of human duty. It is to "do unto others as you would that others should do unto you." It is absence of professional jealousy, and doing this, not in a manner that will convey the impression that we simply mean "how much is there in this for me." It is often a question in my mind, whether in the so-called elevation of our profession we are not failing to encourage that love for our fellows, and that courtesy toward each other, which was so marked in days past, and is now among those who made up our profession *"before it was elevated."*

RECENT CONTRIBUTIONS TO THE DIAGNOSIS AND TREATMENT OF EMPYEMA OF THE MAXILLARY SINUS.

By G. L. MORGENSTHAU, M. D., Chicago; Late Assistant at the Throat and Chest
Department of the Policlinic, Vienna.

Empyema antri Highmori with its well-known classic symptoms is comparatively a rare occurrence, considering the frequency with which this disease has been found postmortem. In 103 autopsies (Gradenigo), this disease was discovered nineteen times. The great discrepancy is explained by the results now obtained by the more accurate and simple methods of diagnosis. A recent writer (Jeanty) maintains that, while typical cases are not very often encountered, "latent" empyema often exists and persists.

The influence of empyema upon the teeth need not be dwelt upon. The first and second molar teeth usually project into the floor of the cavity; and often they and other teeth penetrate into the cavity itself. As the disease involves the deeper layers of the naturally thin mucous membrane which acts as periosteum, caries of the teeth can result. Thus, it is seen, diseased teeth may not be the cause, but even the result of empyema. This explanation must appear very plausible, *a priori*, when the etiology is considered. While authors disagree as to the relative importance of nasal and dental troubles in the causation of empyema, there is no doubt that both kinds of factors can and do exert a pernicious influence. Rhinologists meet with cases of empyema in which the teeth, even according to the dental expert's opinion, are apparently in excellent condition. These are brought about by nasal diseases. Zuckerkandl has shown that the nasal and antral cavities are so intimately connected that even a slight diseased condition of one is followed often by injection of the mucous membrane of the other. The huge number of nasal catarrhs, especially in our exacting climate, must lead us to expect many antral troubles. Hypertrophic rhinitis can easily produce stenosis of the natural opening of the maxillary sinus; nasal polypi, which so often originate from the middle turbinated body, may occlude the same opening. The air now completely enclosed within the cavity, is shut off from the atmosphere, and cannot be renewed. It is absorbed by the blood vessels, causing passive hyperæmia and catarrhal hypersecretion. The mucous membrane, under normal conditions, does not secrete more than can be removed either by evaporation or absorption by the lymphatic system. Catarrhal secretion in a closed cavity, says Bosworth, gives rise sooner or later to suppuration.

Whatever may be the origin of the disease, we expect a discharge from the nasal cavity. In the majority of cases we do find this most constant and reliable symptom.

The discharge may be from one or both of the nasal fossæ; continued or intermittent, dependent on the position of the patient or—more accurately—of the natural opening into the middle meatus of the nose; accompanied, or not, by a fetid odor which may be perceptible to the patient only; causing an insipid or disagreeable taste in the patients' mouth, depriving him of appetite; escaping through the anterior or posterior nares. Unilateral flow of pus from the nose is of the greatest value, because its other causes

(syphilis, neoplasms, foreign bodies) could be diagnosticated by an expert. When, however, inspection and treatment of the nose (clearing the normal opening by the removing of polypi and hypertrophies, by pushing the turbinated body away from it with a probe, etc.) are unsuccessful, then other means of diagnosis must be adopted. Hartmann's method of injecting fluid through the natural opening still holds good as a diagnostic aid. It is certainly practicable in a number of cases. I have seen him treat cases effectually in the same way. The objections to this procedure will be discussed later on; but its value in aiding diagnosis should not be underrated, for it is connected with but little discomfort to the patient. Still more agreeable is transillumination. It is used in Berlin to confirm a diagnosis: being free from all painful sensations to the patient, elegant, and of decided merit. Several conditions are essential if it should not disappoint. The room must be completely darkened, and the lips firmly closed over the handle of the electric lamp. The instrument itself must be small and yet powerful. I use one which is fed by a storage battery of six volts. The cheek beneath the eye usually appears equally illuminated on both sides. When one antrum is filled with pus the corresponding portion of the cheek is darker than on the other side. The finer details cannot, of course, be described in this paper, but will soon be appreciated after a number of trials on normal and sick individuals.

When neither inspection of the nose nor transillumination lead to a positive diagnosis while the subjective symptoms are present, then we must have recourse to the third and most reliable diagnostic aid, the exploratory puncture. It is then eminently welcome. When we are dealing with cases in which the teeth are not affected, the antro-nasal wall should be cocaineized. A large syringe (on the style of those commonly used for hypodermatic medication) with a strong curved needle is thrust through the wall, as far back in the lower nasal meatus as is possible. By aspiration fluid can be drawn from the antral cavity. The appearance of only a few drops of pus clears the diagnosis.

In most cases we will, by these various means, arrive at a conclusion which justifies us in performing one of the operations for empyema of the antrum. If there are obstructions to the escape of pus by the natural channel they must, of course, first be attacked. The removal of polypi, etc., may alone suffice to relieve

*See the interesting article by Freudenthal, *N. Y. Med. Rec.* 1890.

the patient of the distressing symptoms. As shown below, communication between the nasal and antral cavities, is necessary for efficient treatment. Injections through the natural opening can then be attempted. They should be tried when the patient insists on bloodless treatment. In the majority of instances they will not be able to cure the disease.

The operations now in favor with most rhino-laryngologists—as far as my experience of several years in the clinics of Berlin, Frankfurt-on-the-Main, and Vienna, permits me to judge—are made from three different anatomical parts; the lower meatus of the nose, the facial wall of the antrum, and the alveolar border of the superior maxillary bone. Besides, perforating the antro-nasal wall from the middle nasal meatus was suggested so long ago as the last century, and recently advocated by Zuckerkandl. But the same objections must be made against it as against Hartmann's less painful method. The opening would be in the upper part of the cavity instead of being at the most dependent portion. There would be no counter opening, nor would it be possible to investigate the cavity by eye or probe—essential points which will receive due consideration.

The two methods to which I would draw attention are urged by Krause and by Kuester. They obviate the necessity of removing a healthy tooth and enable the use of the "dry" treatment. It is maintained that repeated injections are a continued source of irritation to the mucous membrane. On opening the cavity, it is flushed with some warm solution of an antiseptic. Not a few ounces are injected; but the medicated fluid is introduced through the artificial perforation, and allowed to escape through the natural opening till the cavity is well cleansed, i. e., till the water runs clear and pure from the nose. Then the remaining fluid is driven out and the cavity dried by blowing air through the cavity. A Davidson syringe is very handy for producing a continuous stream, the force of which can be regulated with nicety, and for supplying the current of air. After the lining of the sinus is thus carefully prepared, powder can be applied to it directly. Iodoform is the most reliable. But if the patient objects to the odor, or fear of intoxication renders caution necessary, it can be replaced by iodole, aristole, boric acid, pyoktanin, or sulphonal. It is gratifying to see inveterate cases yield to this treatment. Only when pus again appears in the middle meatus will it become necessary to repeat the injection of fluids.

In Professor Krause's throat clinic in Berlin empyema is treated in the following manner. The lower part of the nose is well cocaineized (10 per cent) to lessen the pain, and to obtain as much room as possible. A curved trocar of the size of a lead pencil is introduced into the lower meatus until it becomes necessary to crowd the cartilaginous septum to one side. The point of the trocar being thus carried to where the antral and nasal cavities are separated by only a thin bony wall, it is thrust through it. The stilet is withdrawn; and through the canula to which rubber tubing is attached, the antiseptic solution and then the powder is thrown into the antral cavity. The next day no or very little pus appears in the middle meatus. The first washing-out will usually suffice. The insufflations require the use of the canula. It is guarded by a well-rounded, snugly fitting conductor, and introduced in precisely the same manner as the first time, in order to find the artificial opening. This is only too much inclined to close, as there is no actual loss of tissue. The flap serves, however, as a protection against the entrance of mucus, etc., from the nasal cavity.

Powder should be blown into the cavity generously every second day or less, always according to the appearance of pus. It is not at all necessary, namely, that the cavity be filled with pus to cause it to ooze through the natural opening. I have seen the mucous membrane of the sinus, both *intra vitam* and *postmortem*, swelled to 10-15 times its normal thickness. Thus, if but a few drops of pus are formed, they can with ease emerge from the hiatus semilunaris; the œdematous swelling bringing them near it, and nearly obliterating the lumen of the cavity. Krause cured patients permanently within two weeks. But there are undoubtedly cases which are combated for years by various medicaments, with remissions and exacerbations. The persistence of suppuration must be ascribed to some obstruction or permanent irritation. It is well known how frequently ridges and bridges extend from one wall of the sinus to another, dividing the cavity into compartments, which in turn may not communicate with each other. While we are calling upon every new antiseptic in the vain hope that it may stop the process at last, we may be treating a lower division of the antrum which is not diseased, the guilty upper or outer chamber being out of our reach. The disease itself can, in the course of time, lead to the formation of new bone. The spiculæ can be the cause of constant irritation, or the suppuration may be kept up by a

supernumerary tooth. In a word, the diseased part is best examined to its whole extent by the surgeon.

With this object in view, Kuester makes an opening in the facial wall of the antrum large enough to admit the little finger. He can thus explore, by palpation or by probing, all sides and nooks of the cavity, break down adhesions, ridges and septa; remove irritating bodies or, possibly a sequestrum; and, lastly, if ocular inspection and palpation prove it desirable, use the sharp spoon more or less vigorously on the diseased mucous membrane. Kuester states that microbes are not only in the fluid contents, but also in the walls of the cavity. Suppuration persists as long as the microbes exist in it. Furthermore, pus remaining in one of the pockets becomes stagnant and irritant. For these reasons his operation is a radical one. After cocainizing the gum of the upper jaw he makes a flap of both mucous membrane and periosteum, the base above extending from the root of the first præmolar to that of the first molar tooth on the affected side.

The periosteum is pushed away carefully, and the flap clapped and held back by an assistant. With hammer and chisel the bone is removed to the desired extent. The little finger then explores the whole cavity, on its important mission. The cavity is flushed, the medicated solution traversing the cavity and leaving it by the natural opening; then it is packed with iodoform gauze. Suppuration usually is reduced to a few drops within twenty-four hours. After a few days a thin drainage tube, fastened by a thread to keep it from disappearing within the cavity, prevents the flap from uniting too soon. Kuester is also in favor of not repeating the flushing. When only mucus is secreted, the mucous membranes may be stimulated by a weak solution of nitrate of silver. He prefers to leave a little fistula which he can close any time by touching the margin with a cautery. A small plate will hold the tube in place, and guard against the entrance of particles of food.

Finally, the old operation of extracting a tooth and penetrating through the alveolus is now modified by flushing the cavity but once, and then employing powder instead of injections. The results are better than formerly.

That the process frequently cannot be stopped, however, must again be explained by the supposition that irritation is kept up in one of the ways described. It seems desirable in most cases to ex-

plore the cavity. Kuester's radical measures will, therefore, meet with the approval of many. In obstinate cases which cannot be relieved by milder means, Kuester's method must be adopted. It complies with all the demands which the most exacting surgeon might make:

- (1) The artificial opening is at the most dependent part.
- (2) The injected fluid enters and leaves by different openings, traversing and cleaning the cavity before the powder is applied. The medicated solution can be removed, and the lining membrane dried.
- (3) We are enabled to submit the entire field of operation to a searching examination; to detect and take away obstructions, foreign bodies, etc.
- (4) Direct action of both instruments and medicaments upon the diseased membrane can be insured and watched.

Often Krause's treatment will be of avail. Dentists, above all, will appreciate its applicability where a sound tooth is at stake. 240 Wabash Av.

PROCEEDINGS OF SOCIETIES.

CHICAGO DENTAL SOCIETY.

Regular meeting, March 1, 1892, Dr. D. M. Cattell, President, in the chair.

Dr. E. D. Swain read a paper entitled, "Failures of Dental Operations."

Dr. J. G. Reid, in opening the discussion, said: Mr. President, I did not expect to be called upon to open this discussion. I certainly was well pleased with the paper, especially that part of it that refers to ethics. It is difficult for one to discuss a subject that is so near in harmony with his own ideas. There were some things in the failures of dental operations that were not mentioned in the paper, some that I hoped would be referred to, and I don't know whether latitude is given to us to go outside of that or not. I believe that the use of excavators and chisels are far more serviceable to the dentist in the preparation of cavities than the engine. I do not mean that as a general statement, but reasonably so. I believe that the dental engine is used by many a great deal more than it ought to be. I find myself drifting from it quite a good deal, and I find that if the instruments are kept in good

shape, sharp and properly made, cavities are very easily, quickly, and comfortably prepared.

Another thing. The burs that are used in the dental engine are not of the best shape. I mean the burs are too large; they are not fine enough. I believe we would overcome a great many of the difficulties that we now experience in the preparation of cavities if they were made smoother and not as large, and the blades were more numerous on the bur.

There was one point I was interested in particularly, that is, of opening into pulp canals with the engine. I think this might be criticised a little, as in the hands of a very careless operator it may occur. An experienced man would make a very serious mistake to do it, and would be either blind to what he was doing, or unthoughtful, careless, or thinking of something else possibly. I have never been so unfortunate to my knowledge, as to bore through a root canal with the dental engine, especially in the locality mentioned in the paper, because I am careful about using it. I can see how it might be done. I can understand how a man might possibly go between the bifurcation of molars sometimes. I have done it myself in a few instances. We all have such failures as that. They occur probably because of anatomical abnormalities of the teeth.

With regard to the ethical part of the paper I will say that I wish we had more ethics in the dental profession, that we could discard the thoughts of jealousy. My attention has been called to this many times. I know that persons are in the habit of criticising the dentists that have done work for them. Patients are going from one dentist to another. That is a notorious fact in a large city like this. A great many of them like to "shop," and they sometimes have a tale of woe to tell about what their dentist did, and there are persons who are eager to grasp such sentiments as are presented to them. They make use of them to further their own ends. I know this to be so. We should have no reason to criticise the operations of another dentist. He may have done what in his judgment at the time indicated was the best thing to do. Dentists may have good reasons for performing operations that we know nothing about, and these operations may seem to us imprudent. I have done this thing myself, and I have been criticised for it. Patients have come back to me and said that so and so said so and so. I had good reasons for performing those operations at

the time. We err in judgment a great many times. We are not all capable of being able to tell just what is the best thing to do at all times. There are some persons who have a natural ability to tell what is the right thing to do at a certain time, but they are few. There are a great many physicians who are able to diagnose disease very readily, while others cannot do it. They can tell absolutely what is the trouble with the patient, while other practitioners cannot and do not do it. I believe it is a gift. Therefore we should do unto others as we should like to have others do unto us. The sentiment of the paper is beautifully expressed, and it certainly is worthy of great consideration.

There is one point I desire to speak of that was not mentioned in the paper, and that is the fitting of bands about the roots of teeth. We have been taught that bands should pass just beneath the margin of the gum. I will go farther than that and say that where they have just barely passed under the margin of the gum, the gum recedes very quickly above the band, and decay commences at that point. I have seen it in a great many instances. With the root well prepared I believe in having the band pass to, or nearly to the process. If you just pass it under the margin of the gum the food will generally crowd under sufficiently to be caught by the edge of the band, I do not care how accurately it might be fitted.

DR. I. A. FREEMAN: I was very much interested in the paper, and there were many points brought out that were of interest to us all, and yet there are some that have not been touched upon either in the paper or the discussion. It seems to me that very largely our failures in dental operations are dependent upon a want of plan or system, and I think we are very materially helped by adopting a plan from the outset with regard to the usual work that we have to perform. Of course the extraordinary work, that of restoring and bringing into use for a limited time wasted teeth, is a very different thing. When we see operations that have lasted for twenty-five years, and the walls about the fillings are still intact, we may call them successful or typical operations. They are not failures and cannot be recorded as such, although recurrence of decay upon other parts may reach these fillings in time. From my own observation and study of this matter, I think that our failures are dependent more upon a lack of system than upon the manipulation of material, for we see it not only in our daily work but in clinics

where points are covered up by material so that we cannot tell exactly whether there is sufficient material to protect them or whether it is sufficiently condensed. I believe we should endeavor to begin our operations covering such points as will be hidden later on, and know positively that they are properly protected.

As regards our code of ethics suggested by the paper, it is one of great satisfaction to me. I want to say that my acquaintance with the gentlemen connected with dental societies for the last twenty-five years has been this: that they have been very fruitful in helpful ideas and purposes for our development. They harbor no jealousies. Such was the condition of things in the past when societies were not in vogue, and that was before dental education had arrived at anything like the state it is in to-day. It is true that men were very jealous of one another. While they were conscious of the fact that they did not possess ability or observation to endure criticism, they hid themselves away in their own rooms and laboratories and allowed no one to gain admittance.

It has not been so in the last few years, and I have been thankful for the kindness that has been shown me in my professional life. Where criticism could have doubtless been justly bestowed, the assistance and suggestions of other practitioners have been helpful to me. I have been subjected to very severe criticisms by some of my competitors whom we never see in dental societies. I have been censured by these men for my failures. I know a great deal can be done in the way of discouraging young men by these criticisms. I recall one instance where I was doing my level best to save the pulp in a central incisor that had been injured by a young lady while jumping a rope, it catching her in the mouth and throwing her down, caused a good deal of disturbance. When she came to me one pulp was dead, and the other, a central incisor, was in a state of active inflammation. I endeavored to save that. The pain was of such an excruciating character that I felt justified after treating for two or three days in opening into the pulp cavity. This occurred Saturday. During the following Sunday she visited another dentist with her father, and the dentist declared that the man who would open into a tooth of that character ought to be horsewhipped, and I do not know but what he might have had some idea of coming down to perform the deed. These cases are not satisfactory, and as Dr. Reid has said, we do not know what governs or prompts men to make operations that other

dentists criticise. I have met with several experiences of this nature, and I have found it convenient to look at the brighter side of things and advise patients when they come to me and speak about what the other dentist did, that the best was undoubtedly done for them under the circumstances. For instance, a lady came to consult me with reference to an extortionate bill that had been rendered by a certain dentist. I refused to see the case at first, but finally consented, but did not pass any judgment upon it. The case was one that needed some little advice, and I simply said to her that you and your dentist do not agree upon the price that you consider right. I told her to go back to him and say that she did not feel quite right about the charge and to see if there could not be some settlement brought about. She declared to me that she would rather he would sue her first. However, she went and out of a bill of \$129 the dentist kindly agreed to settle, she giving him \$50 in all. It was quite a nice thing for her that the dentist was willing to settle in that way. I will say that he was not a member of any dental society.

DR. G. S. SALOMON: When I came here this evening, I expected to have the pleasure of listening to a paper of at least an hour's duration; I am disappointed, it being a very short one. I do not know why it is a short one either. When a paper is read before this society, at its close one member after another will get up and compliment the essayist upon his excellent paper. This has not been done this evening, and it may be a compliment to the essayist, for these compliments are very seldom sincere.

The paper has dealt with failures in dental operations. What has Dr. Swain touched upon? Simply filling teeth and why fillings fail. The work of filling teeth is not all that dentists are called upon to do. Would we be justified in calling them dental operations? It is certainly a dental operation to fill teeth, but it is certainly not the only thing that a paper of this kind ought to contain. There are a great many other operations which might be named, but which were not touched upon in the paper. If a student in a dental college had prepared such a paper as that he would probably have done as well as Dr. Swain, although he would not be able perhaps to do the work like the essayist does. Dr. Swain's remark of a graduate who has had five years' practice, talking to him as he did, does not enter into any consideration. I

have seen operations performed fifteen years ago that are not good, and all of these had good margins, and that is where most operators fail in preparing the margins of their cavities they are about to fill. There is very little said about the preparing of margins of cavities, but how important is this in a good filling. It does not make so much difference about the amalgam being thoroughly hardened or the gold thoroughly condensed; if you have a poor margin in a cavity and leave it unprotected it is bound to give you trouble. Your filling is apt to give away. It does not make a particle of difference whether you use excavators or burs, but you should use the right instruments in the right place. Most dentists use very large burs in large cavities to save time. These burs are very coarse and are not fit for finishing margins. Finishing burs should be used almost exclusively for this purpose, but most dentists imagine they are too expensive for the preparation and that they should be used simply for finishing fillings. If you cannot get small finishing burs have them made to order. That is where, in my judgment, a great many failures occur, the margins of the cavity not being properly prepared. Of course, if the material is not put in in a proper manner, the filling will also come out, but it does not make so much difference whether gold, amalgam or cement is used as long as the cavity is prepared right and kept dry by applying the rubber dam. How many dentists there are that go to work and prepare cavities in a slovenly way and fill a tooth under water and then expect such a filling to remain in a tooth. I cannot see how they expect them to remain.

I expected the essayist to have touched upon crown and bridge work, as it seems to me we are all trying to keep that part of the business quiet. I do crown and bridge work myself and I do not pay a license. I do not belong to the Dental Protective Association at present. Maybe Dr. Swain does not do any crown and bridge work, but for the purpose of drawing out a discussion I think he ought to have touched upon it. Why do crowns fail? Because the roots are not properly prepared, not properly treated. The bands may fit all right, they may go under the gum far enough after preparations have been properly made. The paper did not touch upon rubber plates, gold plates, plates with clasps, suction plates, etc. If the paper were to touch upon the failures of dental operations, why were not these things mentioned so that we could come properly prepared to discuss them? I wish we could have

the failures of our work discussed oftener than we do ; we are all too apt to speak of our successes, but not of our failures.

DR. A. W. HARLAN : Mr. President if there is no one else burning to get on the floor, I would like to say a few words on this subject. I am very glad that Dr. Swain took up the subject of failures of dental operations so that we might have something to talk about. I do not care to touch upon any of the points that the paper touched upon, but I will begin with two or three headings I have noted down.

About seventeen or eighteen years ago when I used to pump medicines through the roots of teeth, and used a barbed broach and wound cotton around the broach, sometimes I would leave cotton in the root, and then I could not get it out. I failed to cure the abscess, and I failed to fill the root. So one little failure brought on two others. If I successfully pumped medicine through the root and it came out at the fistulous opening, and I did not leave in any of the cotton, then I would take another broach with a little cotton and moisten it with oxychloride of zinc, I would then pump that up there, leave the cotton and I would not get the root filled, so I would have another failure ; consequently I abandoned the treatment of abscesses by using a barbed broach wrapped with cotton, and adopted another method so that I would not leave any cotton in there. I likewise abandoned the use of oxychloride of zinc for filling the roots of teeth, because I could not get it to the end of the root unless I forced it in there with such pressure that the patient could not stand it. It was absolutely impossible to reach the apex, because there were no smooth instruments that would push it to place after I had got it there. If there was any blood serum or anything that would have a tendency to become decomposed, the oxychloride of zinc would fail. Again, if I tried to fill the crowns of molars with cohesive gold and only used a napkin to keep the cavity dry, generally some dentist or patient would come in and distract my attention or something would happen by which the patient would want to cough, or something like that, so there would be moisture about the gold, hence I adopted a method of not filling the crowns of teeth with cohesive gold unless I first put on the rubber dam. I used to be foolish enough to take a little child seven or eight years of age and fill its teeth with gutta-percha, perhaps because the teeth were not well developed or because the

child was so irritable that I could not handle it. I would let them go two or three years. Sometimes I would meet a child on the street with all its teeth filled with gold. I worked on those teeth during the critical period, and the parents doubtless discovered that I was a bad dentist and they visited some other dentist, who examined the child's teeth and immediately jumped to the conclusion there was room for a gold mine, and the teeth were filled. That brings up the question of ethics. I regard this as one of the most unethical things in our practice. People have such small ideas. They can't see that a dentist is trying to do the best possible thing for them. They break down the fabric he has been building up for them for years.

When I commenced to remove salivary calculus from teeth the instruments were so large that you could not get more than two or three of them in the mouth at once, and it was an utter impossibility to remove salivary deposits with these instruments, and so every dentist who used great big instruments, shovels and scoops failed. But now, what have we? Within the last fifteen years we have the most beautiful, delicate and highly tempered instruments, splendidly shaped, and all that, and the practitioner must be either negligent or does not realize his duty who does not clear off all the salivary deposits from the teeth. He cannot do it in one sitting.

I used to bleach teeth 15 years ago. Many times I bleached teeth without putting in a gold filling. In two or three days I found the tooth got black or dark. When I bleach a tooth now, if there is an exposed end of a dentinal tubule on the side or cutting edge, I cut it out and fill it with gold. I do not leave anything but the gold and enamel to be exposed to the fluids of the mouth. When you bleach teeth and protect the interior, the bleaching will be successful.

I began to destroy the pulps of teeth a great many years ago. I did as do a great many other people, I did not put on the rubber dam. I did not keep the cavity dry. I dried it as well as I could, then applied arsenic, covered it up with sandarac varnish and let it stay two or three days. Then I removed the dressing. I would perhaps punch a hole in the pulp chamber. I would tell the patient to go home, and allow that tooth to be exposed to all the fluids that pass through the mouth including, food, dirt etc. When the patient came back I would fill that tooth, and it would get dark. I did not see many of my own cases, but I saw other

people's. I do not do that now. When I want to destroy the pulp of a tooth now, from the time I decide to destroy it until the root is filled nothing gets in there except what I put in myself—not even moisture. I used to be foolish enough to put amalagam on the buccal surface of a tooth and gold in the crown and not connect the fillings. I do not do that any more, for the reason that the operation will prove a failure if you do not connect the fillings. If you live in one region long enough you will observe or hear of the failures that you have made.

In regulating teeth, I cannot say that this is a phase of practice I care very much about. It requires a great deal of judgment to know just what to do in the extraction of teeth and to look forward to the condition of the mouth of that person, ten or fifteen years after the operation that you have advised, has been performed. Do not remove lateral incisors. That is one of the points. Do not remove cuspids, although I have seen quite a number of absent cuspids. That is one failure that dentistry ought to be ashamed of, that is, to remove a cuspid tooth.

I used to file teeth and cut them away with discs. I began that twenty years ago this last month just after I had read Arthur's fascinating book on the prevention of decay of the teeth. Of all the curses this profession has been subjected to, the publication of that book has been one of the worst.

I presume there are more interalveolar partitions depressed so that they have disappeared and let the teeth drop out in consequence of the pressing in of food and beef-steak on account of the ill-advised operations following the issue of that book than anything else. I do not file teeth any more. I do not Arthurize them. I do not advise anybody else to do it. One of the failures of the dental profession as far as I can see is that practitioners do not charge for consultation. If your advice is worth anything it is worth money. If it is not worth anything you had better quit. I wish I could have had some young man talk to me when I was a boy, and tell me what I ought to do. The trouble was dentists were not the liberal-minded men then that they are now, and there was no such vast fund of knowledge to draw from as we have at present. We live in an age that is noted for its great strides. This profession even in the short time I have been in it, has been expanded and broadened and become so liberal that I am very glad to-night to say that I see a great future for it; and I hope that

every man who is conscious of the little defects in his own make-up or in his knowledge will do all he can to recompense them, to reconstruct himself and stand on a broader platform and get the very highest professional ideas.

DR. GARRETT NEWKIRK : I am not quite willing to agree with Dr. Salomon's estimate of the paper. In the first place Dr. Swain is a near neighbor of mine, and if I can say anything that is agreeable and flattering about the paper I want to do it. If we were to consider all failures of dentistry we would talk here for a week and then not be through. One paper cannot do any more than to give us a start for discussion. Dr. Swain has done one thing for which we are under obligations to him. He has given us a definition of ethics which seems to me to be the best I ever heard. If I correctly understood him, it is "The science of human duty," the duty of professional men toward each other and to their patients. It is right in the line of the golden rule.

Now I wish to say a thing or two about my own personal relations with dentists. I was in medical practice for seven or eight years, always believed in societies, helped to organize four or five medical societies, and belong to two or three now. I associate with medical men and I know that there is just as much jealousy, meanness, narrowness and contemptibility, if I may use that word, in the medical profession as there is among dentists. My experience has been rather in favor of the dentists, by whom I have usually been treated with courtesy and kindness.

My experience with reference to patients who come to me for the first time is something like this : Of course some other dentist has usually been doing work for them. I never ask them who the dentist was, and as a rule they do not tell me. They come into my office and engage my professional services. I take the mouth as I find it and make no remarks. I have generally found that they speak kindly and courteously of the former dentist, if at all. That is the rule. If they undertake to criticise anything he has done or attempt to get me to do it, I simply refrain from doing any such thing. If I say anything to such patients it is something like this : "I do not know what the circumstances or the conditions may have been under which this or that operation was performed. They may have been unfavorable. I presume the dentist did the best he could under the circumstances." Whoever it is, I do not

indulge in any severe criticisms. I treat the practitioner as I would like to have him or any one else treat me. I repeat that patients do not often come to me complaining and finding fault with other dentists.

I do not see why there should be any dispute about hand instruments and the dental engine. It seems to me we could not get along without either. Each has its place. Certainly neat, good chisels are essential, and if kept well sharpened, nothing can take their place. I am very glad Dr. Nelson mentioned the spoon-shaped excavator, and, by the way, I mean to get up a set before long. It seems to me that the judicious and careful use of the engine and bur has just as much its place as the excavator, steel or chisel.

I wish to say that one cause of failure of operations has not been mentioned to-night and that is finishing gold fillings with coarse sandpaper discs or coarse emery strips. Those generally used are not fit for the purpose. A rimmed sandpaper disc, coarse, scratching, ugly thing, has no place between teeth. If you use a coarse disc or a coarse emery strip, take a magnifying glass and look at the revolting surface. It will take you half an hour or more to remove the scratches or irregularities from the substance of the gold or tooth itself; you would better use only a burnisher than the coarse strip. In my judgment we do not use enough of fine finishing knives or cutting instruments, such as Dr. Black has put upon the market. I mean those little, delicate, fine files that do not scratch.

DR. CROUSE: What do you want a file for if you do not want it to scratch?

DR. NEWKIRK: These files do not scratch. They are not made with creases running in different directions which make scratches. They are really trimmers rather than files.

I am glad that Dr. Harlan spoke of the inefficiency of the discussion in regard to pulpless teeth. He struck the key-note of the whole thing when he said he does not allow anything to enter the pulp chamber but that he puts in himself.

DR. J. N. CROUSE: I cannot wait any longer before saying something in regard to this subject, because there is such a conglomeration in my head of contradictions and absurdities that I am

afraid I shall not be able to single out anything that will be of interest.

The first gentleman, the essayist, closes his paper by decrying the elevation of the dental profession. He closes the paper with some remark of that kind which somewhat surprised me. He forgets that 25 years ago there were not so many dentists here, consequently not so many to help get up a disturbance, and it is an old saying that the more cats you get in a back yard the more noise they will make, and if they are not killed the noise goes on. We are living now in a city of over a million inhabitants with 500 or 600 dentists. Hence more unprofessional conduct because there are so many to select from and not because the profession is more elevated than it was 25 or 30 years ago.

The next gentleman advocated driving bands up higher to prevent recession of the gums. I do not see how this will prevent recession. As soon as you drive beyond where you have trimmed you have gotten edges extending beyond the margins, and in most cases harm will follow such practice.

The next gentleman wants spoon-shaped excavators. If there is anything that is an abomination in sensitive teeth, it is a spoon-shaped excavator. There is nothing that tortures a patient so much and accomplishes so little in a given length of time. I generally prefer a hatchet-shaped excavator, I mean by this one that is flattened on each surface so that each has five cutting edges. I do not use as many of the common chisels as I used to, as these excavators when sharp, take the place of chisels—they cut either way by drawing or pushing and answer the purpose of other excavators. Of course every man has a right to his preference in shape, but I recommend this peculiar shape as preferable for most cases.

Dr. Harlan said he had treated alveolar abscesses with a barbed broach and cotton to force the medicine through the fistula, and had had a great many failures in years past. Taking a barbed broach to force medicine through the root of a tooth was a foolish thing to do even sixteen years ago. He did not tell us how he does now. I have not changed my line or procedure in twenty years, and have often described how I treat abscesses. After preparing the cavity, getting it dry with the use of the dam—I take a piece of soft India rubber—as near the shape of the cavity as possible—perhaps a little larger—then fill the cavity with carbolic acid, and with this rubber and a blunt instrument, force the medicine through

the fistula. I have seldom failed in doing so effectually in this way, and I still keep it up.

I am still foolish enough to put arsenic in a tooth and dismiss the patient for two or three days.

One of the most common causes of failure is a lack of correct diagnosis—that is a careful examination of what is to be done, also good judgment as to the best way of doing it. Some cases should be contoured and others should be separated, and it requires the greatest amount of judgment to determine what is best in each individual case.

If best to contour teeth when filling them, I should contour them. If best to practice Arthur I should do so. There are a class of cases where the hollowing out, and often the dressing out, of cavities, from the approximal surface of the front teeth, is the best thing to do, when this can be done without marring the appearance. In such cases I practice on the Arthur principle to the best of advantage.

When I have patients that I know will take care of their teeth, after they are filled, and they would be more comfortable for mastication for being contoured, contouring in those cases would be the best practice, although it requires much more labor to contour them than to do it otherwise.

I should hate to dispense with excavators or burs. Instead of boring away after the cavity is full of chips so that you cannot see where you are going, my assistant stands by my side and uses a warm air syringe, and I can see where the bur is going. I think I can perform a delicate operation with a bur. Course burs are an abomination. A long time ago I had some bur makers make me a lot of burs with a third more wheels in them than the ordinary burs have. I use this kind now and prefer them, because I think I can prepare the cavity more rapidly and with more safety to the patient, and with greater satisfaction to myself.

Just one thing more and that is in regard to patients accusing the dentist of boring holes in their teeth—spoken of by the essayist. I presume sometimes cavities are filled in teeth when it is not necessary, and that holes are bored in teeth where there are no cavities, but I think these cases are rare. The greatest mistake however and one which is a greater injustice to the patient, is the neglect to find the cavities that are there and should be filled. Many times it is a very difficult task to make sure that you have

filled all the cavities there are to be filled. And a failure to do so is the greatest injustice a dentist can impose, and this would be my answer to the patient accusing the former dentist of drilling holes in the teeth where there were no cavities.

DR. A. E. BALDWIN: Before the subject is passed I want to acknowledge my indebtedness to the essayist for his excellent paper. We could not expect him to state or touch upon all of the failures of operations in dentistry because we cannot even speak of our successes without referring incidentally to our failures. To my mind the paper was full of texts for papers, and I do not see how, considering its brevity, it can be improved upon. There was only one point mentioned in it that I would hesitate to endorse, and that is in regard to the implied idea spoken of by Dr. Crouse a few minutes ago about the dentist *making* cavities. It does not seem to me possible that one could do it. I think that we are more inclined to make failures as dentists by not calling the attention of patients early enough in the history of caries or decay of the teeth. If one tooth is badly decayed and there is another one just beginning to decay, some dentists are prone to fill the first and let the other go. When instead if only one is filled let it be the one least decayed. Many dentists simply fill the large cavities and let the little ones go. Some years ago while in the waiting-room of a well-known dentists office, a patient came in and went into the operating room and while he was at work I overheard a conversation that took place. The lady called his attention to a certain place in the mouth where decay was going on and wanted to have the cavity filled. Before filling it, after preparing the cavity, with the patient's consent I was allowed to inspect the teeth, and while looking in the mouth I discovered several small cavities. The dentist filled the tooth, the patient paid the bill and passed out of the office, not a word being said about those small cavities. I said to the dentist, "Didn't you see those small cavities?" "Oh, yes." "Why in the world didn't you call her attention to them?"

"Well," he said, in a way that a great many dentists have "when you have practiced dentistry as long as I have you won't do it. You will just simply do what they want you to do, collect your bill, and let them go." This is a mistake. It is a failure. I think *that* dentist was remiss in his duty to that patient. I think it is just as much our duty to call the attention of patients to any

lack of correctness in the mouth as it is to do that work for which they come to us. We are largely the makers of our own reputations. If we encourage patients to speak disparagingly of others, we are injuring ourselves and our own reputations. I do not think it is anything uncommon to have a patient speak about some operation having been unsuccessfully done. I have sometimes had my attention called to a tooth that was in a defective condition, and the patient would say "that Dr. so-and-so fixed that only a short time ago and it ought not to be giving out at this time." It is not wise to pay much attention to such a remark. A good way to overcome that is to say, as has been suggested by other speakers, "we will not discuss the past, but now your tooth is in such a condition." I think the code of ethics which has been spoken of is the greatest farce on earth. If every man will do by his patients and his professional brethren as he would like to have them do to him, he would then be ethical, and not until then. There is a statement that has gone the rounds many times which is true that "even damning can be done with faint praise", and it is often done too.

There was one point brought out in the discussion that I can hardly see its relationship and that is the comparative ethics of the general medical practitioner and the dentist. Having had several years' experience in each, I do not want to make any comparisons, but I think where you find the most education you will find the least disposition to jealousies. It is a positive injury for us to feel that we must always praise each other. If there is ground for sincere, honest criticism, it is a dental failure if we do not indulge in it.

The putting of bands around the roots of teeth has been dwelt upon. It seems to me as though it is hard to suppose that a band impinging between two natural surfaces would be better than one where it impinges but little; in other words, the least interference with the tissue between the gum and the root of a tooth the better.

The position taken by Dr. Harlan in not letting things into pulpless teeth while treating them except what you put in yourself, is commendable, and I will go farther than that and say, I should be very careful what I put in. Dentists sometimes put in too much. They overdo the thing.

Some one spoke of putting in fillings, which, if they remain for

twenty-five or thirty years, might be called successes. I do not think it is necessarily so in one sense. Of course it would be considered a better operation than one that failed in ten years. I saw a case when I was a beginner in dentistry, where a gentleman showed me a prepared cavity in his mouth of twelve years standing where no filling had been put in, yet the preservation of the tooth was perfect. If a very poor operator had filled that tooth and it had remained for many years it would have been considered a success. I think we should be careful to use discretion and judgment in the preparation of cavities, even more so than in putting in a filling.

This point was referred to in the paper. If I understood Dr. Swain correctly, he did not exactly criticise the use of the dental engine, but that either it or hand instruments should be used with care and thoroughness. With care and judgment we can use either to advantage. I agree with the last speaker that there is a great deal of good accomplished by the use of the dental engine; that we sometimes do work with it that it would be almost impossible to do with a hand instrument. I have no doubt that some skillful dentists make failures because they do not use judgment in preparing and shaping cavities. Unless we get a perfect enamel edge with a supporting wall of dentine underneath, our work will not be durable, it does not matter how skillful the operator may be. I believe we would have many less failures, and it would be a greater satisfaction to ourselves, if we would place ourselves as far as possible in the position of a patient and look upon each operation as a very important one.

In regard to the implied criticism of crown and bridge work, that a good many of us were probably practicing it, but did not brag of it, I, for one, feel that a great deal could be written on failures in dental operations embracing nothing but crown and bridge work. I do not wish to be understood as condemning all cases. I think just the same care and judgment are necessary (and perhaps to a greater extent) in properly deciding as to what cases are the proper ones in which to resort to these remedies. An improperly constructed or applied bridge is a great curse.

DR. E. NOYES: The saddest and most disgraceful failures referred to this evening are such as those mentioned by the last speaker, when he told of the dentist who only made the operation

his patient asked him to do, entirely ignoring everything else that required attention. The dentist who conducts his business on such a plan degrades himself to the level of an ordinary mechanic or worse. A man is his brother's keeper by the force of moral obligation, but in addition, he who studies and practices a profession voluntarily undertakes to be so to those who intrust themselves to his care, as far as the scope of his profession extends. It is still more astonishing that a man should say, as this one did, "When you have practiced dentistry as long as I have you will do the same way." Gentlemen, length of service in practice does not tend to produce that kind of sentiment or that kind of practice. If a man does business on that plan it is because of his inherent incompetency and selfishness, and not because he has been a longer or shorter time in practice.

The paper referred to the occasional assertion or supposition on the part of some patients that holes have been bored in sound teeth for the purpose of filling them, and intimated that probably such a belief is sometimes well founded. Some criticism has been made upon this, and I am going to tell you a tale in illustration of it. A certain family had been for some years in the care of one dentist, each of them visiting him about twice a year. One of them had numerous very slight imperfections, or possibly only deep indentations, in enamel of grinding surfaces, which had been carefully watched and observed to make little or no progress toward decay, it being only occasionally that one of them needed filling. It happened once that this individual came during the doctor's vacation and so went to see another dentist who proceeded at once to fill a dozen or fifteen of these grinding surface pits or seams. Comment is unnecessary.

DR. SALOMON: As the discussion is not strictly limited to failures, but seems to be more on the subject of incidents of office practice, I would like to say a few words in regard to it. I recall a circumstance which will show that the code of ethics is not always the best practicable thing, or that men should have the same ideas in regard to it. If a patient suffering from a severe toothache—another dentist's patient,—should ask you to extract a tooth for him, you would hardly feel like saying, "I will not touch that tooth. I will let you have your toothache." Some time ago a patient of mine who has been under my care for ten years, had a

severe toothache. He went to several dentists to have it extracted but they would not do it. Finally he happened to go to one who extracted it for him. The tooth was a lateral incisor. In the evening I happened to meet him, and I said, "What did you do with that tooth?" He said, "I had it extracted." I said, "let me see it." I took the tooth, put it in a glass bottle, and told him to come to my office in the morning. I had tried to stop the toothache for him several times, but failed. I happened to be out of the city at the time the tooth was extracted by another dentist. I took the tooth and replanted it, and to-day, five months later, the tooth is as good as any other in the mouth. I hope to be able to bring the patient here some evening for you to examine the tooth.

DR. NEWKIRK: In regard to the case spoken of by Dr. Baldwin and mentioned by Dr. Noyes, who said such practice would bring the profession down to the level of the artisan. I hold that the labor of the artisan or mechanic is just as valuable and dignified as anything else. It is bringing the profession a good ways below that, it brings it below any valuable and dignified labor. For my part I would not do an operation for a patient under such circumstances. I give the person to understand that I am to put his mouth in good condition immediately or very soon, or I will not touch it. If he will not let me do everything that is necessary, remove the tartar from his teeth and leave his mouth in a healthful, cleanly condition, I do not wish him for a patient.

DR. SWAIN, in closing the discussion, said: I desire to say very little except first to thank the gentleman for the very slight punishment they have inflicted, and secondly to assure them that in my belief the essay has been a success. I felt when I came here this evening that my paper would prove a worse failure than any of those mentioned in it, but on the contrary it has called out an hour and three-quarters of good, profitable discussion, consequently I am more than pleased. My foremost intention in writing the paper was to say something that would elicit a good deal of discussion.

Two of the most prominent dentists in this city—or, for that matter, in the United States—were recently discussing dental subjects. One of them said, "there is no work on operative dentistry, and you ought to write one." "No," he says, "I do not care to do it. Why we have not a good work on that subject I do not know." One of them said it would take a long time to write such a book

and it would be a large one. If I had taken up the subject of failures and attempted to exhaust it, it would be coextensive with a work on operative and prothetic dentistry. I should have taken the wind of Dr. Salomon's speech and he would have gone home disgruntled.

I thank Dr. Harlan for what he has said regarding the paper.

As to the matter of ethics, considerable has been said about that. I was led to say what I did in that particular because within the last year or two I have been led to feel more and more that true ethics is lacking in the dental profession. I believe it is so. Like every other advance that has been made in our profession it can only be brought about by agitation and discussion.

I am afraid Dr. Crouse was not listening attentively when the paper was being read regarding that portion pertaining to the drilling of holes in teeth. I said a certain dentist of long continued practice made such a remark in my office, and that a certain other gentleman who was much older than the dentist, supplemented it with other remarks. I did not ask the young ladies to give me their opinion as to what was done in the excavation of the incisor teeth which I mentioned. I drew my own conclusions. I did ask them a few questions, but they were not pointed.

In regard to the filling of small cavities referred to by Dr. Baldwin, we all know how common it is for patients to ask us if a cavity is large enough to be filled. Perhaps the same kind of conversation goes on in a doctor's office when a patient visits him.

I will close my remarks by saying that the Committee when they make up their program for another year, you will know where to go to find a man to write an essay upon the subject of failures in dental operations. Dr. Salomon will fill the bill exactly. He almost volunteered to do it, and I think the Committee should go to him for such a paper.

THE DENTAL REVIEW.

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CLINICS.

There is little doubt that a great deal of good has been accomplished in the profession through the medium of clinics. It is proverbial that an idea can be grasped, or a method of practice taught, better by demonstration than by written or spoken description. There are many little tricks of manipulation which in the aggregate prove a wonderful aid in practice, but which either seem too trivial to write about or are of a nature not easily described. The careful observer at a well conducted clinic can gain more practical benefit in a given time than in any other way.

But we have a word to say on behalf of the two principal individuals connected with the average clinic, viz.:—the operator and the patient. Too often do the members of a society—some of the members at least—treat these individuals as if they were mere automatons erected there for the sole purpose of entertaining the curious minded. We are willing to admit that for the time their main office is to interest and instruct if possible, but the fact should not quite be lost sight of that they are human. The position of either is an unenviable one.

Speaking for the patient, it is bad enough to be operated upon under any circumstances, but the miseries of the dental chair are rendered infinitely greater by having a lot of spectators crowding closely around the victim and often leaning against him, and excluding even the possibility of a breath of fresh air. The usual elevated temperature of the room adds to his discomfort. Worse than all else is the rough usage his mouth sometimes gets from those

who wish to examine the operation. A thoughtless on-looker, in his anxiety to see what is being done, will often lean over and reach past one or two others and pull down the corner of the patient's mouth as if it were made of India rubber. A laudable desire to gain all possible information is commendable, but this can be done without abusing the patient, and with more decorum than is usually observed at clinics. Too many spectators crowding around the chair at once is conducive neither to benefit to the members nor to comfort to the patient.

As for the operator his position is often less enviable than that even of the patient. At best he is working at a disadvantage. He is removed from his usual environments and feels awkward. His instruments are not in their customary places. That nice balance of the nervous and muscular systems which calls out his most expert manipulation is lost. He cannot, as in his office, give the operation that essence of concentration which renders him oblivious to everything else. He should not be expected to do as good work here as he ordinarily does, and yet the average spectator demands of him more than usual excellence. The operator is doing well if he succeeds in demonstrating some principle connected with the work in hand, and his clinic cannot logically be called a failure because it lacks in some minor detail.

In view of all this it is especially gratifying for him to hear some one who is just walking away from his chair—usually an individual merely out of his teens telling a companion wherein the operation could be improved. Or if the clinic is a filling which has been properly finished and polished and the operator has left the chair for good it adds to his reputation to have some critical genius come along and probe around the filling and scratch it up so that he who follows him will insert his mirror and ask "Who put in that filling?" The man with the glass usually elevates his eyebrows when informed who the clinician is and then suggestively remarks: "I like the way that fellow polishes his fillings!"

These are some of the annoyances connected with clinical work but so long as clinics seem the surest means of spreading practical knowledge we suppose some one must submit to the annoyance—unless—unless—society members learn to exhibit more charity toward clinicians and their patients.

C. N. J.

DELAYED.

The pressure is so great on our columns that much matter of interest has to lie over until next month.

THE ILLINOIS STATE DENTAL SOCIETY.

The next meeting will be held in Springfield the second Tuesday in May. Dentists from neighboring States are invited to be present.

DENTAL ADVICE EXTRAORDINARY.

It often seems marvelous how wrong impressions become engrafted in the minds of people and how difficult it is to remove these notions or to estimate their deleterious effects. Probably the early origin of many medical superstitions and errors might be traced to the time when medicine was shrouded in darkness and when the healing art was the craft of the priest. The ignorant were always expected to be awed in the presence of these "holy" dispensers of the Grace of God, superstition and fear were instilled into their narrow minds by these wily penetrators of human nature.

Strange as it may seem in this enlightened age, it is nevertheless true that superstitions of ancient times still represent the belief of many and stand as a living exemplification of the inferior quality of the contents of their crania.

The frequently expressed connection between the "eye" teeth and the eyes, had its origin with Celsus, who referred to the dangers of extraction. The majority of the laity to-day, who know anything about teeth at all, believe in that fossilized idea. Some excuse does exist for the fervent attachment to such an idea, for Celsus was a great man, but why any sane professional man of the present time should circulate the most unreasonable recommendations, such as we are about to mention, is beyond our comprehension. Dr. E. Feibes of Aix-la-Chapelle (*Therapeut. Monatshefte* November, 1891,) recommends the use of chromic acid in the treatment of syphilitic affections of the oral cavity. Among other things he says: "In bad cases of stomatitis by means of a fine probe armed with wool, I clear away the putrifying, stinking masses from between the teeth and gums, then apply in a similar way wool dipped in a concentrated solution of chromic acid, after previously painting the parts with cocaine." So far as the future effects on

the teeth of this individual is concerned, we should recommend that he immerse his head for three minutes in a bucket filled with a good quality of nitric acid.

Another squib that originated in the fertile brain of some dentist, and which was only recently again republished by a dental journal, carries the wonderful thought that the addition of aromatic sulphuric acid to the tooth powder or pumice or rubbed between the teeth on floss silk, does clean them.

As a slight improvement on this crude method we would suggest the use of a strong pure solution of sulphuric acid; not only would this remove stains but an entire cavity could be wiped out of existence, the tooth could be cut down if necessary to the gum line and it would be in condition for a crown. Certain stains upon the teeth are situated *on* the surface of the enamel, other discolorations are due to a deposit of pigment in defective interstices or pits of the enamel. The former are readily removed by friction, the latter require the entrance of something into the pit, or the removal of the enamel on each side of the pit thus carrying the objectionable coloring matter along with it. Such a process can not prove to be other than injurious, not only because of the removal of enamel at the time, but because of the necessity of subsequent cleaning. The enamel's roughened surface collects deposits and necessitates removal. It is safe to leave any stain or discoloration which cannot be removed by the faithful application of those frictional substances, whose effect on tooth substance is well known. Let us have less of these injurious recommendations originate with the profession, and at the same time let us correct those that are already current.

DOMESTIC CORRESPONDENCE.

To the Editor of the Dental Review :

DEAR SIR: Will you kindly allow me space in your valuable journal to correct an erroneous impression which may have been made upon the minds of some of your readers, concerning my views on "Dental Education," by a *too limited* quotation from an editorial in the November issue of the *Southern Dental Journal*.

Any right-minded person can readily understand how one's entire meaning can be changed and misrepresented by clipping a few sentences midway in an article, where the whole thing is inti-

mately connected and bears upon the meaning intended to be expressed.

In Chicago there seems to exist a kind of professional "Carousal Club" (imaginary or otherwise), in print styling their meetings "Symposiums." At their meetings there is generally found a certain reporter who takes down discussions, imaginary or otherwise, which take place between Messrs. A. B. C. D. E. and F., who seem to comprise the discussing element of the "Club." At their carousal No. 3, A. seems to have taken it upon himself to dissect one of my editorials, which appeared as before stated, and selecting that part, which being disconnected, seemed to him most ridiculous, presented it for the criticism of Messrs. C. E. and F. (B. and D. left out).

A. seems to have read the article carelessly; intentionally misunderstood it for the sake of argument, probably, or perhaps it might have been toward the close of the "Symposium," in which case it would probably have to a certain extent mitigated the offense; any way he seems to have entirely lost sight of the fact that disconnecting the few sentences he quoted placed me in a false light and rendered my meaning different from that which was intended to be conveyed.

In defense of my views expressed in the article in question, I simply ask for space to reproduce that portion of it as it appeared in the *Southern Dental Journal* that it may be correctly read, thereby placing me in a correct light before the readers of the DENTAL REVIEW, many of whom probably do not read the *Southern Dental Journal*.

After reviewing the progress of the profession for the last ten years and expatiating on the rapidity of the changes which had taken place in such a brief space of time, the article continued as follows, the italics being the quotation which A. took issue with:

"Then again, some enthusiasts get an idea that there is no limit to a student's capability of absorbing knowledge—that the professional requirements in dentistry should extend into various other branches of science—in fact, where to stop seems to be the problem. In extending this limit we should always try to keep in view the fact that it is only a very few minds, from the effects of various consequences and environments, that are capable of acquiring and appropriating knowledge beyond a limited area. It would indeed make a beautiful profession from the standpoint of a literary enthu-

siast. could we raise the standard so high and make the field so broad as to shut out all medium sized brains—allowing only those to enter who are capable, from the smiles of fortune, or otherwise, of acquiring broad and liberal culture. This would be an ideal profession, we must admit, and would bring honor, dignity and recognition. This, however, is only the dream of an extremist and is not practical. We want a *high* standard, but we want it placed within the reach of all good, intelligent, practical men, that they may go out and do good in the world by giving good and wholesome advice and relieving suffering humanity. We cannot dispense with the medium capacitated men, there are places for them to fill. Then we need leaders and enthusiasts, too, but there will always be a supply of these who will rise above the common level, urged on by ambition, until they are listened to and recognized. ‘*The dental profession is fast becoming great and we need men to work in various capacities. We need leaders, teachers, writers, inventors, investigators, and so on until the list could be extended illimitably. But if I were asked who, of all the different classes named or unnamed, was doing the most good from a philanthropic standpoint, the answer would be the modest practitioner, who is seldom heard from, reads one or two journals, attends his State society, and quietly pursues the even tenor of his way, relieving suffering humanity by practicing his profession intelligently and conscientiously.*’ In fixing the standard of the profession let us not exclude the practical man.”

Thanking you, Mr. Editor, for the space so kindly lent me to set myself and the *Southern Dental Journal* right before your readers and wishing you continued success with your most excellent publication, I remain.

Yours faithfully,

H. HERBERT JOHNSON.

LETTER FROM NEW YORK.

To the Editor of the Dental Review:

New York is putting on its Spring airs, as one comes down town, mornings—sackcloth, together with plenty of ashes. Our law demands all this garbage removed before these hours, but what do New York people care about their laws? We have legislation enough for the perfect regulation of all municipal affairs, more *law* is the call and we are getting it. One side says, it is all the fault of Tammany, and the other side charges it to the mugwumps. Judas Iscariot was a square man compared with the present-day transgressor, for he had

manliness enough to own up to what he did, had "no pards" and saved all governmental expenditures, by taking himself off quickly. It doesn't look that way in dental matters. It looks, at the present writing, as though there was a disposition to try and make a scape-goat, which is only a Jew trick. We predict it will not work well for the projectors. We are gathering the ripple of gossip, which is generating into a murmur, particularly since the Anniversary Meeting of the First District Society, and the murmuring is going the rounds to all points of the compass. Judging from many expressions that come to us, there is real cause for the repeating of the inquiry which was sent out from the Odontological Society some two years since, viz: "Are we a liberal profession?" We hear expressions like this. Is it not about time that we settled this question by electing men to the important offices of our calling, who do represent the best professional expressions? Cool, Anglo-Saxon words do not indicate the animus of the future purpose, nothing but italics are satisfactory. Who will fill the office of the Columbian Dental Congress in '93? The answer is going out all along the line. It is heard West and South, in a very pronounced manner, to say nothing of this section of the country. "No man shall occupy that office who has not some *pronounced* professional standing, secured by the manifestation of *decided* skill in one or more branches."

It is further said that we do not care to figure before foreign professionals in anything like what may be construed into a compromise. We will stand represented as a *true profession* by a *truly professional* man. We emphasize this as a worthy thought and not any too easily put into active exercise. The man who shall preside at Chicago in 1893, should be, and must be, one who will go into history, standing for something in ability above the ordinary. Such an one has been on the mind of many, and it was canvassed and fully agreed by all that we had no one who could better fill the position, for good looks, true gentlemanly qualities and scientific ability. We do not believe that there would be a dissenting voice, if we were at liberty to divulge the charmed name—enough for the present.

There was no little speculation in connection with the monthly meeting of the First District Society. The meeting passed quite unexcitingly, although there was no little sparring over the question of the constitutionality of the amendments attached to the new by-

law. We see a good deal of tinkering in so much legislation, but we are not in it, so do not worry about it. It got out that the society would elect Dr. Gibson [who was brought before the society for a supposed violation of the code of ethics; charge made by Dr. Kingsley, some months ago which I noted in my letters] to fill out the remainder of the term made vacant by Dr. Kingsley's resignation. It was rumored the day previous to the meeting that the slate was changed, and something was planned for the new administration succeeding this that would freeze out all the undesirable material which, it is claimed, the society has had enough of, yet we fail to see how any board of officers could have worked more energetically and sincerely for the good of the society. Dr. Kingsley's resignation was presented and accepted without any comments worthy of notice. Dr. Jackson, the vice president, occupied the chair which he will only do in the interim. Although by custom he would be entitled to election as President, but (it is said) he is not the choice of those who would rule. Dr. Jackson, certainly is not inferior in real ability, he is one of our *very* promising practitioners.

The monthly clinic was fully up to the standard, 91 in attendance. We are inclined to predict that Dr. Curtis will prove timely in the introduction of his clinics in oral surgery. If he proves his ability in the situation, it is an opportune field for him. The Doctor has had all the modern education by such a cultured surgeon as Prof. Garretson, 25 years ago he could not have had any chance of success as doubtless awaits him now. The surgical interest, value, and its understood necessity could not have been so matured had it not been so assiduously taught by our devoted friend and brother, Dr. Atkinson. To Dr. Atkinson's conversational methods the profession owe a debt of gratitude which will become more and more apparent in the future.

Foundation work has been laid by him with great self-sacrifice, such as has never been excelled by any member of our calling. All this, better prepares the way for a more appreciative attention by those who have not had any educational advantages in this connection. Dr. Curtis having announced that he should give attention exclusively to cases of oral surgery, will attract more unselfishly the notice of dentists. Dentists are peculiar in this respect, (i. e.) they have sometimes been a little suspicious that in sending a patient to another, giving his attention to surgery, that the patient might not return to them, and that has sometimes proved

true. Dr. Sisson, of New York, operated, using Canon's *new* gold, a form of cylinder not in vogue. Dr. Parr, of New York, demonstrated a new form of crown and bridgework. New methods, and more a coming, and must be seen to be appreciated. Byron E. Holm exhibited a primary battery in connection with a new motor appliance, stopping, starting and reversing switch, etc., thereby changing the velocity without reducing the power.

February 8, at Plainfield, closed the career of one who will long linger in the memory of all who treasure character, sincere purpose and skill of a quality far above the ordinary. Such a life of professional activity has Dr. John Allen maintained for a period of sixty years. For many years he has gone daily to and from his country home to his New York office. He lingered but a few days on a bed of sickness, which terminated in paralysis of the throat. His second wife passed away some two years ago, and since that time, he had notably failed in health and spirits, although he kept a grip upon actual practice as long as he came to the office. The Doctor's career has been full of incidents that would be of practical interest to many, for he is familiarly known in connection with the introduction and continued practice of the notable porcelain teeth and base, fused upon a platinum base, "white gold," as the doctor came to term it, popularly known as "continuous gum work."

With this artistic work Dr. Allen's name will always be associated. The twenty-two beautiful souvenirs awarded him by all the World's Expositions might well be the envy of any laudable ambition. We have known Dr. Allen personally for thirty years and counted him as one of our warmest friends. Dr. Frank Abbott said truly at a banquet given the late Doctor that Dr. John Allen was one from whom no breath of scandal ever came. Dr. Allen was a consistent seeker after the values of a daily *supernatural* religion, a distinction we make from the common so-called "natural religion," a religion of self; the former, a religion of unselfishness. The dear old doctor has nobly earned the rest to which we have no doubt he has gone. His only son, Dr. Charles Allen, survives to continue his father's practice, in which he has been faithfully schooled for the past thirty-two years.

Dr. John Allen was nearly eighty-two years old. He was a student of John A. Harris, brother of Chapin A. Harris, the founder of the first dental college in the city of Baltimore, Md. His early

practice was in the city of Cincinnati, Ohio, and during that time he was prominent as a teacher of the Ohio Dental College. He came to New York some forty years ago. Long may we cherish the memory of "honest Dr. John Allen."

F. R. Sturgis, M. D. presented a very able and exceedingly interesting paper on "The distinctive character of Syphilitic teeth," illustrated by instructive cuts. He took the decided ground that the deciduous teeth often manifested the same characteristics as seen in the permanent teeth. Although this is not commonly the accepted theory, Dr. Rhein sustained the essayists views. Dr. Ottolengui took exceptions to the views advanced in the paper, regarding the peculiar deformities of the teeth. He claimed that all these were found in connection with cases of cleft palate. There was a *very* long, but interesting paper on "Syphilitic Lesions in the mouth." It was read by Dr. Ottolengui but was furnished by Dr. Hugenschmidt, of Paris, France. He is an associate of Dr. Thomas Evans, who, without doubt, enjoys the most popular reputation of any dentist living, or dead, and whose history will be most remarkable when written, interspersed with very interesting incidents. Such popularity can never again be secured, for no such circumstances will again occur.

We have not a few that are far in advance of him in scientific attainments, but for his position occupied during the last forty years no one would have sustained it better.

Dr. Marshall, of Chicago, edified the odontological at their monthly meeting, upon the subject of "Shocks," or what may be called "Surgical Collapse." The attendance was not a large one. The paper was full of timely hints and worthy of all practitioners who aim to make practice humanitarian. The paper was very favorably received, so much so that most of the discussions took on, principally, the form of compliment. As the use and disuse of chloroform was embodied in the paper, it was made a *special* object of discussion, for as it was announced that at the former meeting there seemed to have been a suspicion that the society had too emphatically endorsed the use of chloroform in connection with minor operations. However, it will continue to be the fact that there will be those who think they are intelligently sanctioned in its use, although some may think otherwise. We think it an utterly foolish remark that we heard after the meeting: "No dentist should be *allowed* to make any use of chloroform, whatsoever." There is

no justifiable reason why an *intelligent* dentist should not make use of *any* article that a regular medical man should see fit to make use of, if in his judgment it will be of help to his patients. Is a dentist a doctor?—again pops into prominence.

Dr. Marshall made a good impression in New York. We enjoyed a pleasant conversation with him the following day. A complimentary dinner was given him at the Arena, an annex of the famous Hotel Imperial, corner of Broadway and Thirty-first Streets.

Moving time is at this season of the year. Dr. Bogue goes from Twentieth Street to Forty-eighth Street ; having leased his present office for ten years. He has been in Twentieth Street since 1862, scoring a financial success we hear. It was once said that what he made in his New York practice was required to meet the demands of the Paris establishment. We recall readily the various speculative remarks regarding the Quartette Association engineered by him in Paris. It was doubted whether it could be made a success.

The arrangement was floated into existence by the payment of \$1,000 apiece, as a joint capital, by Drs. Bogue, Moffat (formerly of Boston) Daboll, of Buffalo, and C. D. Cook, of Brooklyn, the father-in-law of Charles S. Tomes, the son of the famous Sir John Tomes, of London. The plan was that one of the party should be in Paris six months, and in this way the foreign office would be continually in operation. Drs. Bogue, Moffat and Daboll, proved their staying ability. Dr. Cook, being a gentleman of very nervous temperament, did not succeed in the French language. It was too quick for him, and it doesn't do to (*parler*) with a French person, and moreover, he may have been timid, "*Pastruient montes, noscitem ridiculas mus.*"

The Doctor is good in pantomime gestures, but the language would run him off the track. Well, the quartette is now a thing of the past, and Dr. Bogue is all there is to show for it. He puts in his six months regularly alternating between New York and Paris, and everything indicates prosperity.

Dr. Bogue is a painstaking operator and always full of little practical suggestions. Dr. Atkinson used often to remark that Dr. Bogue knew how a set of teeth should be cleansed. He also emphasized the importance of it to his patients, and we ditto it. It is a great point in practice. Dr. Dunning, formerly of this city, italicized the importance of it. The *cleaner* the teeth, the less of caries, and the less need of germicides. Dr. Bogue has always

indicated its value as a prominent factor in his professional work. *Patriunt mortis*. The Paris mountain labored, and it has brought forth a favored child christened *Success*.

We spoke of its being moving time. Bananas are again plenty in the market, and we frequently see some very expeditious moves, aided by the treacherous "peel" as we pace the streets. I never saw any one gather themselves up so quickly that no one could see them.

But we heard of a woman who got up in a meeting and gave her experience in backsliding; she said, "I never backslid but once, and then I slipped so quickly that God didn't see me." No one that ever slips on a banana peel can slip back and have no one discover it. I recall my last slip on one. I fell down and off went my new stovepipe into the gutter; when I got straightened up I could hear a nice little feminine titter behind me. We don't fall so gracefully at sixty as we did at ten.

Dr. Bogue injects a hint, viz., the use of stearine to be applied to phosphate fillings, after they are hardened, keep dry and apply the stearine with a warm instrument; it will not only protect the filling from dissolution, but enables one to put on a *shine*. Dr. Bonwill suggested parafine sometime ago, claiming the same benefits. Try these three things, and if found good, pass them along. We think we recall his entrance to New York, coming from Chicago, formerly an associate with Dr. Allport. Dr. Bogue occupied the office of Dr. Norman W. Kingsley while the doctor was in Europe, for at that time he had interested the profession exceedingly in his dealings with cleft palate, and from that date his professional repute received an accelerated ascendancy, which afterward was enhanced by the issuing of his able work on Oral Deformities, which has given him a lasting reputation. The general use of this work as a text-book also gives him the acknowledged author in that department of art.

Dr. Bogue has occupied the office in Twentieth Street continuously since entering it, and soon became the owner. He has proved himself a successful financier, for he is reputed as being fully secured in a fortune of \$100,000. It is reported that he has rented for offices sufficient to give himself a free rental. Doubtless his removal has been dictated by the overcrowded condition of his street with business, which, of course, has enhanced the value of his property.

Is a dentist a business man? This is the question that is going the rounds just now. Look out for a corker in financial circles. A few dentists have been making some money and are itching to make more. Why not? Some are retiring with plethoric purses. Dr. Charles Miller, formerly of New York, and treasurer for dental societies for many years, has settled on a farm in Barnstable county, Mass. Dr. La Roche, a practitioner in New York for many years, has retired to New Jersey, and sent in his resignation as active member of the First District Society, but reserved a desire to remain in some capacity. It was suggested that most likely he wanted to be made an honorary member. He will be. How much honor comes to a man that way? Have not some bodies cheapened honorary membership of late years?

Dr. Crouse, can you ask more? The mass meeting of March 29th, has undoubtedly given a certain sound—over 400 new members have joined; 300 of them cash the remainder notes, (so stated by Dr. Walker.) By the janitor we learned that about 550 dentists were present. Philadelphia turned out well—Pierce, Jack, Bonwill, McQuillan, Faught and Reh fuss, New Jersey ditto, a goodly number. It seems that Levy has got up from “below” where he was supposed by some to be “smoking” for he was present. Connecticut was headed by Gaylord, an ANo. 1 fellow, who has put his hand down deep into his own pocket for protection, and Dr. McManus, from Hartford, but no one east of there. Shepard would have been here, but was confined, by sickness. The query was, where was New England? Well, she has never failed in the hour of duty, and we don’t think she will. Dr. Crouse can well feel that a generous response in the interest of protection has been made. The Doctor was more serious, we thought, than it is usual for him to be. He tried to pose as an artist, an impressionist, one of those fellows that rub a big lot of paint all over a canvass and you have something that resembles a hay field with a whirlwind in it. This picture the Doctor tried to show by imagination; that in the “sweet by and by,” this association was to enlarge its charity and scoop in, not the whole earth but all that the dentists might stand in need of, for independent manhood. He said the profession was full of it, only it was latent. It needed developing. One thing he said that looked a little as though it was meant for a pointer. He said there were no politics in the Protective Association. Its aim was *true professional ambition*.

A very general approbation was evinced on all hands, over the success of the meeting. Doctor, one thing you can be assured of, the dentists believe in you.

You got right at them, this time. Every one felt it would be mean, not to stand by you. We predict that fire was fully kindled at this meeting. Now, don't get up nights any more but put in all the sleep you can get. Forge out all you can during the day hours and lay it before the boys and they will sustain you. One thing Doctor, a good deal of query was made over your enigmatic allusion to something, which you could not now tell. I refer to the something that would be above par soon. *Par noble frater.* (Is it?)

This is the only ripple we saw on the placid sea. We hope it is not neglect that we have had three meetings this month since the departure of so worthy a member of our calling, as Dr. John Allen, and not a word has been spoken of him. Dr. S. S. White once said, it is a sad thought to me that when we pass away from this life, we are so soon forgotten. One year to-night our dearest friend of the dental profession passed over into the immortal life (Dr. Atkinson, April 2). We have had a numerous gathering of co-workers pass into that existence during the last twelve months.

In such a time as we think not, the call may come to any of us.

Do we look forward to it in hope? We have often remarked that we could wish that all could anticipate so much as we do, for the other life, yet we are happy and eager to remain and fill out our career. So may we all of us be. We make these last remarks thinking them appropriate, for we meet some who are nearing the end of their career and are sad and hopeless.

Notices for the State meeting are out for May, with a fine array of talent— Prof. Darby of Philadelphia, Talbot of Chicago, Boedecker of New York City, Westlake of New Jersey, subjects not yet announced. Dr. Boedecker is going to present an *absurdity* proved to be *scientific* by the microscope. How *scientific* men will howl when it comes. Dr. Boedecker is in the harness again; *good*.

Ex.

REVIEWS AND ABSTRACTS.

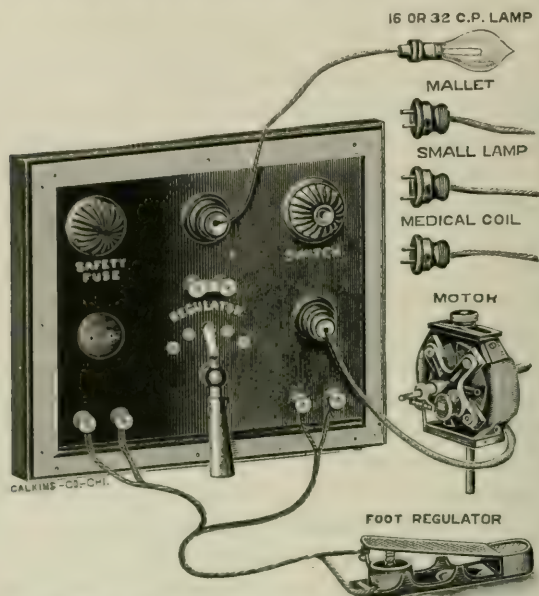
CURRENT FROM THE MAIN.

BY C. J. BOYD WALLIS, L. D. S.

As electricity is now coming into more general use, some convenient method of adapting the dynamic current to our several purposes is very desirable; with this in view I have designed a switch-board, with suitable resistances and shunts conveniently arranged, which admirably answers the purposes for which it is intended. It consists essentially of a series of carbon resistances arranged in sets; each carbon rod is placed in a glass tube and has a resistance of about 25 ohms.; the rods are capped with brass screw pieces, by which they are coupled up for the various purposes indicated on the face-plate, namely, a 32 c.p. lamp, a $2\frac{1}{2}$ c.p. throat or mouth lamp, a motor, mallet, cautery, and medical or induction coils. The 32 c.p. lamp acts a double purpose, namely, as a resistance in series with the throat lamp, and as a powerful illuminating medium for special purposes. A feature in the board is a set of carbons, each of about 14 ohms resistance, arranged as shunts to the resistance carbons; these are placed at the base of the board with a switch to bring them into play. With this double arrangement of resistance and shunts the current can be regulated to any required force. The board consists of a mahogany frame having a polished slate front, upon which are arranged the switches, sockets, safety fuses and terminals. The glass tubes containing the carbons are placed between thick sheets of asbestos board, and a clear ventilation runs through the board. The motor answers admirably for dental and surgical purposes, such as the working of circular saws, trephines, drills, etc. It can be worked or regulated by increasing or decreasing the pressure of the foot on a treadle, or independently of the treadle by shifting the motor plug into the socket below, and bringing the shunts into play, by means of which the motor can be worked at any speed, from a gentle revolution of the armature up to a speed of about 5,000 revolutions per minute. In my own house I have had a special wire laid on to lead the current to the board independently of the leads for the house illuminations; this I think a good plan, for the extra cost is trifling (in my case £2), and a good current is thus obtained, while the risk of inter-

rupting the illuminating current by short circuiting or otherwise is avoided.

I have had a board on a smaller scale, but similar to the one here described—in use with a powerful battery for years, and my new



board I have had in use some few months with perfect satisfaction. The board here described was made for experimental as well as practical purposes, and consequently is rather more complicated than is necessary for dental uses, therefore Messrs. Miller & Woods, electricians of Gray's Inn Road, to whom I am indebted for the very satisfactory way they have carried out my suggestions, have now modified the original designs, produced a board less complicated, and consequently more suited to dental purposes. The accompanying illustration gives a very good idea of the general outlines of the new board.

A milliampère meter can be introduced into the circuit by which the current or "dose" of electricity to be administered or used, can be estimated with sufficient accuracy.—*The Dental Record*.

CHART OF TYPICAL FORMS OF CONSTITUTIONAL IRREGULARITIES OF THE TEETH. By Eugene S. Talbot, M. D. D. D. S., Chicago. Published by the Wilmington Dental Manufacturing Co., Philadelphia, 1891.

This collection of plates is published by the author in support of his well-known theory, according to which certain irregularities of the teeth are due to constitutional causes. The work contains the following tables:

- I. Jaws in normal position.
- II. Excessive development of superior maxilla; arrest of development of inferior maxilla.
- III. Excessive development of the superior maxilla and the rami of the inferior maxilla; arrest of development of the body of the inferior maxilla.
- IV. Excessive development of the rami of the inferior maxilla.
- V. Arrest of development of the inferior maxilla.
- VI. Arrest of development of the rami and excessive development of the body of the inferior maxilla.
- VII. Excessive development of the superior maxilla and alveolar processes.
- VIII. Arrest of development of the superior maxilla.
- IX. V-shaped arch.
- X. Partial V-shaped arch.
- XI. Semi V-shaped arch.
- XII. Saddle-shaped arch.
- XIII. Partial saddle-shaped arch.
- XIV. Semi saddle-shaped arch.
- XV. Semi V and semi saddle-shaped arch on one side and semi V-shaped arch on the other side.
- XVI. Semi V and semi saddle-shaped arch on one side and semi saddle-shaped on the other side.

CATCHING'S COMPENDIUM.

The price of Catching's Compendium of Practical Dentistry for 1891 is \$2.50 instead of \$2.00, as stated in last month's DENTAL REVIEW. Send orders to Dr. B. H. Catching, Atlanta, Ga., for both volumes.

PAMPHLETS RECEIVED.

Noncohesive half cylinder and loop filling by Isaac B. Davenport, M. D., M. D. S. Articulation of the teeth by the same author. Reprints from *Dental Cosmos*.

DENTAL COLLEGE COMMENCEMENTS.

STATE UNIVERSITY OF IOWA—DENTAL DEPARTMENT.

The Tenth Annual Commencement Exercises of the Dental Department of the State University of Iowa, were held at the Armory, Iowa City, Iowa, on Thursday, March 10, 1892. The annual address was delivered by John J. R. Patrick, D. D. S. The degree of Doctor of Dental Surgery was conferred by the President Charles A. Schaeffer, Ph.D., upon the following named (57) graduates:

M. F. Anderson, Muscatine.
 Fred. Andregg, Mankato, Minn.
 H. W. Anger, Brooklyn.
 R. N. Baker, Iowa City.
 J. W. Ball, Delaware.
 F. A. Boysen, Dubuque.
 Hugo Braun, Davenport.
 H. W. Baldwin, Oconomowoc, Wis.
 M. Brennan, Ashland, Wis.
 J. C. Braley, Harvey, Ill.
 C. P. Burt, Elwood, Ill.
 E. H. Ball, Philips, Neb.
 M. H. Breen, Le Mars.
 J. F. Curry, Friendship, N. Y.
 F. P. Chapman, Clarinda, Iowa.
 W. A. Dredge, Amboy, Minn.
 C. F. Dwight, Marcus.
 E. S. Denbo, Corydon, Ind.
 L. A. Grigsby, Lena, Ill.
 J. C. Holson, Iowa City.
 J. C. Hullinger, De Witt.
 W. S. Hosford, Iowa City.
 M. A. Humphrey, Minona, Iowa.
 T. B. Heckert, Red Oak, Iowa.
 D. A. Haines, Decorah.
 L. G. Holmes, Birmingham.
 H. M. Harlan, Seymour.
 M. A. H. Jones, Iowa City.
 C. H. Jacobs, Colesburg.

Harry Kelso, Ames.
 E. W. Kerr, Newton.
 C. B. Miller, Waterloo.
 J. G. McCartney, Mitchell, S. Dak.
 H. C. McCrea, Greenfield.
 E. S. McWhorter, Canon City.
 Miss O. A. Otte, Peabody, Kas.
 Miss Julia Otte, Peabody, Kas.
 Miss A. E. Owens, Parkersburg.
 W. H. Pallett, Dorchester, Neb.
 W. W. Perry, Elizabeth, Ill.
 B. A. Price, Afton.
 H. R. Pasedach, Tipton.
 G. F. Pratt, Red Oak.
 E. A. Rogers, Vinton.
 H. F. Randolph, Belle Plaine.
 G. H. Reynolds, Binghamton, N. Y.
 H. C. Schoemaker, Muscatine.
 Wm. Schlawig, Sioux City.
 W. G. Skidmore, Moline, Ill.
 J. E. Stinehart, Iowa City.
 T. S. Stanford, Cambridgeboro, Pa.
 S. R. Swain, Iowa City.
 O. H. Sossaman, Waterloo.
 F. A. Strayer, Jefferson.
 M. W. Warner, Parkersburg.
 R. J. Wilson, Oelwein.
 F. R. Wright, Morning Sun.

OHIO COLLEGE OF DENTAL SURGERY—DEPARTMENT OF DENTISTRY—UNIVERSITY OF CINCINNATI.

The forty-sixth annual commencement of the Ohio College of Dental Surgery, Department of Dentistry—University of Cincinnati, was held at the Odeon, Cincinnati, Ohio, Wednesday, March 9, 1892.

Conferring of degrees and address, James Leslie, D. D. S., of the Board of Trustees.

Awarding of prizes, Prof. H. A. Smith, Dean of the Faculty.

Address—"The Demands of our Times upon Professional Men," Dr. W. O. Thompson, President of Miami University.

Class oration, Garrett A. Billow, of New Carlisle, Ohio.

PRIZEMEN.

A gold medal to H. J. Custer of Ohio, for the best general examination in senior class.

A gold medal to H. T. Hawkins, of Ohio, for the best attainments in the operative department.

A gold medal to G. C. Minturn, of Ohio, for the best attainments in the prosthetic department.

A silver medal to G. A. Billow, of Ohio, for the best examinations in chemistry and materia medica.

A silver medal to Jas. H. Robinson, of Canada, for the best examinations in physiology and general pathology.

A silver medal to T. C. White, of Ohio, for the best examinations in anatomy and oral surgery.

A silver medal to S. H. McCleery, of Pennsylvania, for the best examinations in operative dentistry and special pathology.

A silver medal to W. B. Fahnestock, of Ohio, for the best examinations in mechanical dentistry and metallurgy.

A silver medal to F. A. Lush, of Ohio, for the best general examinations in junior class.

The number of matriculates during the session was 143.

The following named are the (89) graduates :

John Ray Adair, Kentucky.
 Alexander Scott Ager, Ohio.
 Anthony Lewis Amann, Ohio.
 Charles D. Arthur, Pennsylvania.
 Charles P. Balger, Ohio.
 Isaac Pettit Bell, Canada.
 Porter Adolphus Bereman, Ohio.
 Charles Solomon Beyl, Ohio.
 Garrett, Allen Billow, Ohio.
 Will Gavitt Bradford, Ohio.
 Louis Arnold Broring, Ohio.
 Harry Lincoln Brown, Illinois.
 Fred C. Burnham, Ohio.
 Julian Caswell Cavagna, Ohio.
 Henry M. Chaney, Ohio.
 George Amos Chapman, Washington.
 Charles Campbell Cherryholmes, Neb.
 Josewh Boran Cochran, Kentucky.
 Charlie Alvie Cole, Ohio.
 John Lorenzo Conn, Kansas.
 Neclessen S. Cox, Indiana.
 Robert L. Criswell, West Virginia.
 Harrison James Custer, Ohio.
 Miss Hattie A. Dobell, Indiana.
 Elvin Parker Eddy, Ohio.
 William Baker Fahnestock, Ohio.
 Phillip Robert Feigle, Kentucky.
 Orlando Moses Flinn, Indiana.
 Edward Bradley Greenlee Ohio.
 Alex. Hall, Canada.
 Ernest Rush Hall, Ohio.
 Frank P. Hamilton, Ohio.
 Clement Vernon Hargitt, Ohio.
 Herman Haupt, Germany.
 Homer Thomas Hawkins, Ohio.
 Lonzo Carl Hill, Ohio.
 Horace Anson Holmes, Michigan.

Curtin Joseph Howe, Pennsylvania.
 Harold Lorenz Jensen, Louisiana.
 Archie Hubert Johnson, Missouri.
 David Saylor Johnson, Pennsylvania.
 Allen John Kimm, Indiana.
 Augustus Fayette Knapp, New York.
 Henry Charles LeBeau, Ohio.
 Robbins Foster Lilly, Ohio.
 George Love, Ohio.
 Will Marquart, Ohio.
 William Harrison McAdow, Ohio.
 Samuel Hampton McCleery, Penn.
 Louis Eugene Menuez, Ohio.
 Charles Willett Mills, Ohio.
 George Campbell Minturn, Ohio.
 Leon David Monks, Pennsylvania.
 George Edward Moore, Canada.
 H. Sterling Moore, Ohio.
 Montie A. Morey, Michigan.
 Edward Parker Nugent, Kansas.
 David Cochran Patterson, Kentucky.
 Edwin Auber Peebles, Ohio.
 King Sansom Perry, Pennsylvania.
 Robert Gale Pinney, Missouri.
 Wilber Nathan Priddy, Kansas.
 William Alonzo Pride, Ohio.
 Henry William Radcliff, Wisconsin.
 Frank Benjamin Rees, Ohio.
 Oliver Taylor Robertson, Ohio.
 James Holton Robinson, Canada.
 Edwin Launder Ross, Ohio.
 Daniel Ulrich Ruegsegger, Ohio.
 Rudolph Schmid, Switzerland.
 Albert Edward Sexton, Indiana.
 Charles William Soddors, Ohio.
 Talmon H. Speece, Ohio.
 Henry Marion Smith, Minnesota.

Charles Willard St. Clair, Ohio.
 James Berry Stewart, Ohio.
 William Harold Tenney, Ohio.
 Clyde Everett Townley, Pennsylvania.
 Joseph Armstred Turner, Ohio.
 Rees L. H. Turner, Missouri.
 Francis Marion Van Buskirk, Ohio.
 Horatio Frank Vandervort, Ohio.

Thomas Corwin White, Ohio.
 John C. Wilde, Jr., Michigan.
 William Elmore Wilkinson, Ohio.
 Ellsworth Williams, Indiana.
 Franz Ellias Willison, Michigan.
 Mrs. Mellie C. Winslow, Indiana.
 Sherman Tecumseh Yaple, Ohio.

CHICAGO COLLEGE OF DENTAL SURGERY.--DENTAL DEPARTMENT OF THE LAKE FOREST UNIVERSITY.

The tenth annual commencement of the Chicago College of Dental Surgery was held at the Columbia Theater, Chicago; Tuesday, March 22, 1892.

The class valedictory was delivered by Hans Bastian Wiborg, D. D. S. The doctorate address by C. N. Johnson, L. D. S. D. D. S., and an address by W. C. Roberts, D. D. LL. D. President of the University. The degree of Doctor of Dental Surgery was conferred by Dr. T. W. Brophy, Dean of the College on the following named (128) graduates:

Number of matriculates for the year 303.

Albert Bromley Allen.
 Clarence Edson Allshouse,
 George Henry Anderson.
 Gustave Edward Anderson.
 Hubbard Gail Atwater,
 Ernest Allin.
 Manning Andrus Birge.
 Thomas Jefferson Borland.
 Jabez Bunting Burns.
 John L. Bingham.
 Lemuel Fairfax Buck.
 Calvin Fergeson Besore.
 Albert Leslie Bents.
 Samuel Hardesty Baker.
 Mark Robert Brierly
 Benjamin Dornblazer Barber.
 John William Beetham.
 Frank Carlton Colby.
 Charles Robert Currier.
 Harlow Arthur Cross
 Curtis Hammond Coe.
 Frank L. Condit
 Bert C. Campbell.
 John Corwin.
 Robert Clark Coy.
 Herbert Armstrong Carson.
 Orie George Collins.
 Albert Paul Condon.
 Amos Winship Dana.
 Will Conger Dunn.
 James House Davis.
 Claude Howard Devereaux.
 Frank Elmer Davis.
 Hiram Darling
 Lewis Mathias Doerr.
 Henry Wallis Ewing.

Albert Eugene Eagles.
 William Edgar Ervin.
 Walter Howard Fox.
 Lewis Eugene Ford.
 Allen Joseph Freeman.
 Frank Oren Finley.
 Herman Peter Fischer.
 Lawrence Sylvester Fezer.
 George Emil Franke.
 Edward M. S. Fernandez.
 George Ramsey Guild.
 John J. Geary.
 Robert Good.
 Jeremiah Gochenour.
 Francis Marion Gray.
 Alfred J. Homfeld.
 Julian Frank Hixon.
 Augustus Finley Henning.
 A. Gallagher Hebbard.
 Marion L. Higgins.
 Robert Anderson Howell.
 Fred Armstrong Ironside.
 Albert Hamilton Johnston.
 Albert George Johnson.
 Austin Flint James
 Frank King.
 Ernest Venzel Kautsky.
 William Frederick Leu.
 Lewis Schuyler LaPierre.
 Frank Leslie Lane.
 William Arthur Lewis.
 Hallvard Lie.
 William Cutler Lumpkin.
 Oscar Edward Meyer.
 John Franklin McCrea.
 William Ephraim Martin.

Herman Minges.
 John Simpson McQueen.
 John Benedict Mason.
 Henry Bruce Meade.
 Walter John Morrow.
 John Henry Muenster.
 Samuel Alexander Nielson.
 Bert Newsome.
 James Toberman New.
 John Egbert Lyman.
 Charles H. Oakman.
 Charles Fremont Palmer.
 Albert James Prescott.
 James Lyon Palmer.
 William Abram Penn.
 Franklyn Pfeiffer.
 George Thomas Page.
 John Dominic Purcell.
 William Conover Parsons
 Frank Everett Phillips.
 George Samuel Root.
 Dennis Herbert Rowells.
 Fred Emerson Reynolds.
 Charles Bennett Reynolds.
 James Arnold Reynolds.
 William Woods Robbins.
 Joseph Herbert Robinson
 Victor Hugo Rea.

Edgar Miner Richards.
 Robert Hutchison Robertson.
 Omro Elmer Severance.
 Bertram Grey Smith.
 Ard Patterson Smith.
 Fred John Staehle
 George Mackay Sutherland.
 Sylvester Elmer Stouffer.
 John Franklin Stephan.
 James Byron Stuck.
 Jeffrey Springle.
 Carl Oscar Wilhelm Schycker.
 Sebastian Ricardo Salazar.
 Paul Steinberg.
 Arthur George Tibbitts.
 Richard Elmer Thexton.
 Edgar Felker Thomas.
 Herbert Hawkesworth Tyler.
 Edward Robert Victor.
 Mathew Wilson.
 Hans Bastian Wiborg.
 James Abram Welch.
 Clarence Walter Williams.
 Charles Albert Wedge.
 Fred H. Wallace.
 Frank Pierce Welch.
 William F. Whalen.
 Louvain Alden Werden.

PHILADELPHIA DENTAL COLLEGE.

The twenty ninth annual commencement exercises of the Philadelphia Dental College were held at the Academy of Music, Philadelphia, Pa., Thursday, Feb. 25th, 1892.

The address to the graduates was delivered by Prof. S. H. Guilford, D. D. S., Ph. D. The valedictory by J. R. Coleman, D. D. S.

The degree of Doctor of Dental Surgery was conferred upon the following named (142) graduates.

Egerton S. Allen, N. S.
 Courtland J. Allen, R. I.
 J. Wilmot Angwin, Can.
 H. D. Atkinson, Mo.
 Vincent J. Baggott, R. I.
 Adolf Balcke, Germany.
 J. D. Ballard, New Jersey.
 William A. Bartlett, Jr., Me.
 Howard S. Bath, Canada.
 Johannes A. Baumgardt, Germany.
 Frank G. Bedell, N. Y.
 Fred W. Benz, N. Y.
 Neil H. Bishop, Ohio.
 John A. Blackett, Australia.
 Sylvester J. Bourgeois, La.
 D. L. Bower, Pa.
 Arthur M. Bowman, N. Y.
 Gertrude A. Bright, England.
 Joseph Brooks, Canada.

Edwin D. Butterworth, N. Y.
 Frank J. Bush, N. Y.
 Hugh F. Calder, N. S.
 Charles Cameron, Can.
 E. E. Cawood, Ore.
 Arthur J. Chilcott, Me.
 John A. Clark, Can.
 J. Edwin Clark, Pa.
 J. Robinson Coleman, Can.
 Edward B. Cottrell, N. J.
 Oscar B. Crawford, Pa.
 Robert Crawford, Australia.
 Wilbur B. Cresswell, Pa.
 J. Maurice Crosby, Can.
 William A. Crow, Can.
 Wm. N. Daniels, Mass.
 Jacques S. David, Roumania.
 Wm. F. Dohrmann, Cal.
 R. E. Duignan, N. Y.

- L. F. Eaton, Conn.
 Elma H. Edgar, N. Y.
 David L. Edwards, N. Y.
 Frank A. Elson, Ohio.
 Edmund P. Ennis, Canada.
 H. H. Erskine, Ohio.
 Deering J. Fisher, R. I.
 Christopher E. Fletcher, Mo.
 Charles A. Frain, Can.
 Carlos Formas Fuentes, Chili.
 Edwin Russell Gamble, Pa.
 Alexander J. Gillis, Mass.
 Chas. T. Gliden, Pa.
 Wesley Good, Mo.
 Sidney W. Gordon, Can.
 Leslie H. Grant, N. J.
 Francis H. Greusel, A. B., Mich.
 John Grieder, Jr., N. J.
 Percy Loucks Haight, N. Y.
 Herbert E. Hall, B. C.
 Charles Ransom Hambly, Ill.
 R. S. Hanna, Can.
 Richard C. Hart, N. Y.
 Harrie Tralee Harvey, Mich.
 W. G. Henry, Pa.
 W. E. P. Hewitt, Can.
 F. B. Hewett, N. Y.
 R. Russell Hogue, Ga.
 Thomas C. Hutchinson, Iowa.
 John L. Jamieson, Ohio.
 Bertha M. Jarrett, Pa.
 William Jones, N. Y.
 Elton E. Jordan, Maine.
 Lewis H. Kalloch, R. I.
 H. P. Kenney, Can.
 C. J. Kennerdell, Pa.
 Chas. A. Kendall, Can.
 Jas. A. Kent, Minn.
 Frank W. Ketner, Pa.
 Howard Kingsbury, Pa.
 E. L. Lane, Ore.
 Edgar D. Larkin, Pa.
 Albert W. Lavelli, Conn.
 Arthur Lemieux, Can.
 T. Segall Levien, Russia.
 Samuel Loebenstein, Mo.
 Charles N. Lord, N. Y.
 Frank R. Lord, N. Y.
 F. M. Lynch, Washington
 James A. Lynch, Mass
 Peter M. D. McGill, N. J.
 A. P. McInnis, Minn.
 John J. McKinstry, Pa.
 A. J. L. McKechnie, Can
 James A. McLaren, Can
 P. J. Macdonald, Mass.
 Hugh S. Mackay, Can.
 Carl C. Marggraff, Conn.
 W. E. Marshall, Can.
 Charles F. Meacham, Vt
 L. D. Mitchell, Can.
 Harry C. Moore, Del.
 E. H. Munger, Conn.
 Walter B. Ousley, Iowa.
 E. C. Palmer, Neb.
 W. T. Pearsoll, Pa.
 Mme. Marie Pedemonte, Austria.
 Oliver K. Pellman, Pa.
 Edward J. Pierce, N. Y.
 Glenn F. Pollard, N. Y.
 W. Henry Povall, N. Y.
 J. B. Pressey, N. J.
 J. W. Purdy, Can.
 R. L. Randall, N. Y.
 Adolph G. Reinhardt, Pa.
 C. H. Reynolds, Pa.
 Henry W. Richards, Utah.
 Duncan P. Robertson, Can.
 Jonas S. Rosenthal, Pa.
 Louis L. Ruppert, N. J.
 David A. Scobie, N. Y.
 G. W. Schock, Jr., Pa.
 Maurice P. Searle, Ohio.
 Frederick F. Seavers, Minn.
 W. B. Sherman, Cal.
 J. C. Shields, Jr., Ore.
 Ella R. Shinn, N. J.
 Edward Shothafer, N. Y.
 E. R. Simmons, Germany.
 John L. Spanogle, Pa.
 J. Henry Stackhouse, Can.
 Milo H. Steel, Can.
 Robert J. Stevens, Can.
 Margaret E. Taylor, Pa.
 Zane B. Taylor, Pa.
 D. A. Telfer, Wis.
 A. Howard Thomas, Pa.
 George K. Thomson, Can.
 J. Melville Thompson, N. Y.
 Frank L. Warren, N. Y.
 Hugh A. Whytock, Utah.
 L. N. Wiley, Conn.
 Charles D. Winsor, R. I.
 Wallace Wood, Jr., La.

UNIVERSITY OF MARYLAND.

The annual commencement of the Dental Department of the University of Maryland was held at the Lyceum Theater, Baltimore, Md., Thursday, March 17, 1892

Reading of mandamus by the Dean, Prof. Ferdinand J. L. Gorgas, M. D., D. D. S.

Conferring of degrees and award of prizes, by Hon. S. Teackle Wallis, LL. D., Provost of the University.

Address to the graduates, by Rev. William T. Roberts, of Virginia.

Class oration, by H. Janney Nichols, Virginia.

The number of matriculates during the past session was 127. The following is the list of (73) graduates :

W. Wolsley Alton, Canada.
 Walter C. Anderson, Va.
 Fletcher G. Asbill, S. C.
 Dabney G. Barnitz, Va.
 Charles F. Baylis, N. Y.
 John C. C. Beale, Md.
 Alexander J. Beville, Texas.
 Samuel E. Braendle, Canada.
 Winfield S. Burd, Pa.
 Andrew S. Burke, Pa.
 W. Bolivar Byers, S. C.
 E. Marcellus Copenhaver, Va.
 W. Felton Deekens, Va.
 J. Harry Deems, Jr., Md.
 William W. Dennis, Ga.
 John H. Diddle, W. Va.
 William E. Dobson, N. Y.
 John Lyons Doremus, France.
 Eben B. Edgers, Vt.
 Robert W. Eicholtz, Pa.
 Louis Ewig, Switzerland.
 C. Dixie Farriss, Ga.
 Lawrence S. Fox, N. C.
 Edwin J. Gill, N. C.
 Eli Harmon Glasscock, Mo.
 George H. Hargrove, S. C.
 Oscar J. Harmon, N. H.
 Lewis E. Hess, Md.
 Frederick C. Humberg, Md.
 Hugh Barbour Hutchison, Va.
 Benjamin L. Jefferson, Ga.
 Silas J. Johnson, Va.
 B. Arthur Jordan, Cal.
 James M. King, Canada.
 C. Rogers LeFevre, Md.
 J. Clinton Macomber, Pa.
 Thomas Rollins Marshall, Va.

Anthony H. Mathieu, Md.
 W. Glenn McGee, S. C.
 George A. McGuire, Canada.
 Robert J. McHarg, Canada.
 J. Morton McIlvain, Md.
 C. Augustus Mitchell, N. Y.
 Harry B. Mitchell, N. Y.
 H. Janney Nichols, Va.
 Clyde Sylvanus Payne, Cal.
 George C. Probst, S. C.
 George B. Quinlan, N. Y.
 Turner A. Ramey, W. Va.
 Joseph L. Rathie, Va.
 E. Edington Reynolds, N. Y.
 Jacob Riser, Iowa.
 Edmund D. Shaw, N. Y.
 James W. Simpson, Va.
 Will R. Simpson, S. C.
 Harry Blackburn Smith, Bermuda.
 Charles B. Stouffer, Pa.
 M. Emmert Stover, Pa.
 Arthur O. Thomas, S. C.
 William A. Thrush, Ill.
 Die P. Tipton, Neb.
 Arminius W. Totten, N. C.
 William H. Van Nostrand, N. Y.
 Harry Van Tassel, S. D.
 Joseph M. Veza, Austria.
 Frank Von Wachter, Md.
 J. Willie Watson, W. Va.
 Montgomery Lewis White, Texas.
 Charles G. Wiley, Pa.
 Henry A. Wilson, Md.
 Edward Kirk Woods, N. H.
 A. Watson Woodward, Va.
 J. Harvey Wool, Va.

NEW YORK COLLEGE OF DENTISTRY.

The Twenty-Sixth Annual Commencement of the New York College of Dentistry was held at Chickering Hall, New York City, Thursday, March 10, 1892.

The number of matriculates was 273. Awarding of prizes was by Prof. Faneuil D. Weisse, M. D. The valedictory address was delivered by Henry P. King, D. D. S., of the graduating class. The address to the graduates by Wm. H. McElroy, Esq.

The degree of Doctor of Dental Surgery was conferred by Wm. T. LaRoche, D. D. S., Vice President of the Board of Trustees, on the following named (86) gentlemen :

John Patrick Burke,
 Miksa Lipot Braun,
 Edward Santley Butler,
 Walter Benney,
 Frederick Brueckner,
 Eugene Bonilla y Cuibas,
 James Edward Byrne,
 Henry Emile Bischof,
 John Francis Buckley,
 Carl Rudolph Otto Bickel,
 Albert William Crosby,
 John Phillip Cromwell,
 Edward Archibald Crostic,
 George Edward Christie,
 Martin Lawrence Collins,
 Nelson Millard Chitterling,
 Louis Bristol Daboll,
 Harry Clay Derby,
 Richard Francis Doran,
 Anthony Charles Durschang,
 Joseph Fuld,
 H. Clay Richardson Ferris,
 Finn. Fosheim,
 Edgar Ozias Goodell,
 John Francis Goger,
 Walter Harris Gardner,
 William Henry Garratt,
 Dexter Glennon Gordon,
 Charles Frank Guntner,
 Charles Casselman Gibson,
 Joseph Gluck,
 Joseph Harvitt,
 John Henry Hughes,
 Wm. Henry Moore Hamlet,
 Peter James Heffern,
 Otto George Hoffman,
 Orion Perseus Howe,
 Henry Dryer Hatch,
 Byron Edward Joubert,
 George Washington Koles,
 Eli Koles,
 Harry Taylor Kelsay,
 Isaac Kroch,

Henry Palmer King,
 Henry Albert Kregeloh,
 Ernest August Kolling,
 Frank Belknap Long,
 Frank Leroy Lockwood,
 Alfred Tennyson Lockwood,
 W. Hawthorne McCutcheon,
 Miguil Ramon Mangual,
 Frank Lester Munsell,
 Augustus MacCollom, Jr.,
 Julius Adolph Mayer,
 Alonzo Silas Mead,
 Edward William McNeil,
 Frederic Thomas Murlless, Jr.,
 Henry Alfred Neech,
 Frederick Smith Parsons,
 Henry Amon Parmentier,
 George Elbert Reynolds,
 George Alphonse Roussel,
 Samuel Schnaper,
 Frank Schroeder,
 Aug. Vancortlandt Stebbins,
 Henry Josiah Stacpoole,
 Jacob Schnaier,
 E. Warren Sylla,
 Henry Gustav Schroeder,
 Edward John Moritz Seebold,
 Engelbert Stoetzer,
 Mario Tolosa y Polidura,
 Ezra Oakley Taylor,
 Zebulon Scriven Taylor,
 George Vande Verg,
 Orwill Van Wickle,
 George Putnam Willis,
 Edwin Chapin Wallace,
 Henry Lamont Wheeler,
 Frank Jackson Woodworth,
 Augustine Joseph Walsh,
 Edgar Williams,
 Willie Jackson Ward,
 Leon Jabez Weeks,
 Harry Fones Whitter,
 Floyd Marcus Zelig.

MISSOURI DENTAL COLLEGE.

The twenty-sixth annual commencement exercises of the Missouri Dental College, Dental Department of Washington University, were held in Memorial Hall, St. Louis, Mo., on March 10, 1892.

Professor Wm. T. Porter delivered the address to the class.

Prizes were awarded as follows: St. Louis Dental Society prize—Gold medal for the best general examination to Orion W. Bedell, D. M. D., of Ohio.

J W Wick prize—Twenty-five dollars in gold for the second best examination to Everett M. Hurd, D. M. D. of Nebraska.

The S. S. White Dental Manufacturing Co. prize—A set of Varney pluggers for excelling in operative dentistry, to Orion W. Bedell, D. M. D., of Ohio.

John Rowan Dental depot prize—A Bonwill engine mallet No. 2 for second best in operative dentistry, to Frederick W. Achelpohl, D. M. D., Missouri.

St. Louis Dental Manufacturing Co. prize—A laboratory lathe for the best set of artificial teeth, to Joseph L. Bridgford, D. M. D., Missouri,

There were seventy-seven matriculates and thirty-three graduates.

A. H. FULLER, Sec'y.

Chancellor Chaplin, of the university, conferred the degree of doctor of dental medicine upon the following named (33) graduates:

Frederick H. Achelpohl, Mo.
George W. Appelgate, Mo.
Orion W. Bedell, Ohio.
Joseph L. Bridgford, Mo.
Otis F. Burton, Mo.
Herman F. Cassell, Mo.
Isaac B. Coil, Mo.
Clarence C. Cowdery, Ohio.
William G. Cox, Mo.
William G. Goodrich, Mo.
Lawrence E. Gordon, Ill.
Christy G. Hampton, Mo.
Richard I. Hart, Wis.
Thomas D. Head, Mo.
Everett M. Hurd, Neb.
Willard P. Inglish, Mo.
Sigmund Jacoby, Mo.

William Kalbfleisch, Ill.
Alfred Lambert, Ill.
Arthur N. Milster, Mo.
Otto Mallinckrodt, Mo.
Arthur T. Moser, Mo.
Christian Muetze, Mo.
Ormund H. Manhard, Mo.
Henry F. Naumann, Mo.
John L. Perry, Ill.
Walter L. Pruett, Mo.
William F. Schwaner, Iowa.
Emil Schaer, Switzerland.
Otis Trotter, Mo.
William G. Teel, Va.
Harry G. G. Van Aller, Germany.
Frank F. Worthen, Ill.

WESTERN DENTAL COLLEGE.

The Second Annual Commencement Exercises of the Western Dental College were held in Music Hall, Kansas City, Mo., on Thursday evening, March 10, 1892.

The Faculty Address was delivered by Professor H. O. Hanawalt.

The number of matriculates for the session was seventy-nine.

The degree of Doctor of Dental Surgery was conferred upon the following (38) graduates by the President of the College:

L. P. Austin, N. Y.
K. P. Ashley, Kan.
W. C. Allen, Mo.
E. C. Brownlee, Mo.
A. C. Barr, Ill.
W. H. Condit, Kan.
T. H. Cunningham, Mo.
F. W. Drom, Neb.
R. E. Darby, Mo.
Fred. M. Franklin, Mo.
F. E. Gaines, Mo.
T. J. Henkens, Kan.
T. I. Hatfield, Kan.
D. J. Hayden, Kan.
William Harrison, Mo.
C. C. Jones, Kan.
L. G. Jones, Kan.
S. E. Johnson, Kan.
F. W. Johnson, Mo.

Otto Jacobs, Mo.
O. J. Kemper, Mo.
C. B. Leaver, Mo.
I. B. Nordyke, Mo.
P. J. Oriley, Mo.
S. T. Peter, Neb.
C. Robertson, Jr., Kan.
H. H. Sullivan, Mo.
W. W. Simpson, Kan.
A. L. Smith, Mo.
J. F. Spence, Mo.
J. H. Swan, Mo.
E. C. Taylor, Mo.
M. D. Vanhorn, Ill.
O. C. West, Mo.
Frank S. Webster, Kan.
A. S. Wright, Mo.
H. Yant, Kan.
Mrs. Alice Yant, Kan.

BALTIMORE COLLEGE OF DENTAL SURGERY.

The fifty-second annual commencement exercises of the Baltimore College of Dental Surgery were held at the Lyceum Theatre, Baltimore, M. D., March 21, 1892.

Matriculates during the past session, 181;

Conferring of class honors by Prof. M. W. Foster; Gold medal, Emile Grosheintz; silver medal, Clinton Kenney.

HONORABLE MENTION.

Robert Ivey Robertson.
James Walker Moore.
Patrick McCabe.
Clarence Hervey Terry.
Charlie Hurvey Winburn.
Nelson Henry Ehle.
Mortimer Lewis Fay.
Baskerville Bridgforth.
Alexander Francis.
Charles Covington McCloud.
Isaac Abner Frazer.
Charles Alberto Bland.
William Carpenter Callahan.
Fred Wickham Sweezy.

Walter Caldwell Carter.
John Emerson Storey.
Robert Steele Cole.
William Aydelotte Taylor.
Zadoc Prescott Shaw.
Emmett T. H. Leonard.
Archer C. Griffith.
Edgar Watts Marven.
Fred Allan Ford.
John Saylor Donaldson.
Peter Alexander McLean.
James Thomas Stuart.
Joseph Donaldson Whiteman.
John Neven Baker.

Awarding of prizes by Dr. Fred A. Levy, President Board of Visitors. Operative. First prize, James Thomas Stuart; Very Honorable Mention, Harry Wilson Knauff. Honorable Mention, Isaac Abner Frazer. Mechanical: First Prize, Baskerville Bridgforth; Honorable Mention, James Thomas Stuart. Bridge Work. First Prize, John Elisha Parker; Honorable Mention, Albert Galiton Tillman. Essay on Orthodontia: First Prize, Frank Harper Jackman; Honorable Mention, Rudolph Louis Zelenka.

Annual Oration by Rev. F. M. Ellis. Valedictory by Philip Ernest Sasscer, M. D. Prizes given, First Honor by Faculty; Second Honor, by James Hart; Operative, by Snowden and Cowman; Mechanical, by S. S. White Dental M'fg Co.; Bridge Work, by S. S. White Dental M'fg Co.; Essay, by Dr. J. N. Farrar, N. Y.

The degree of Doctor of Dental Surgery was conferred by R. B. Winder, M. D., D. D. S., Dean of the College, upon the following named (102) graduates:

Benjamin Dorney Altemus, Pa.
Charles Wesley Arird, Pa.
John Neven Baker, Pa.
Irwin Joseph Beach, Md.
William James Beatty, Pa.
James C. Buchanan, Pa.
William Carpenter Callahan, N. Y.
Walter Caldwell Carter, Mo.
Frederick Abraham Charles, Mass.
Charles Alvin Cochel, Md.
James Robert Donaldson, D. D. S., Col.
Harry Donnan, Pa.
Benjamin Franklin Dulaney, Tex.
Nelson Henry Ehle, Minn.
Mortimer Lewis Fay, N. Y.
John Newton Giddens, Ala.
Richard Lee Gill, Md.
Washington Irving Goodwin, Canada.

Harry White Graham, Pa.
Archer C. Griffith, Cal.
Julio Hidalgo, Venez'a.
W. S. Holbrook, N. J.
Frank Harper Jackman, Conn.
Alexander Jekelfalusy, Wis.
George Marshall Jones, Iowa.
Milo Dempsey Kottraba, Pa.
Robert Milton Krebs, Pa.
Joseph Edwin La Force, Ore.
Emmet T. H. Leonard, Miss.
James Isaac Logan, Ala.
Simon Bernard Meyer, Md.
Patrick McCabe, Australia.
Charles Covington McCloud, La.
George Bradley McFarland, E. Ind.
William Henry McGraw, Pa.
Louis Ambrose Reinhart, Md.

Isaac Lemuel Ritter, Pa.
 Robert Ivey Robertson, Canada.
 Ryland Otey Sadler, N. C.
 Philip Ernest Sasscer, Md.
 John Emerson Storey, Tex.
 James Thomas Stuart, Ala.
 Fred Wickham Sweezy, N. Y.
 William Aydelotte Taylor, Md.
 Fred Aubrey Taylor, Canada.
 Thomas Frederick Warnes, N. Y.
 William Henry Walters, Md.
 Joseph Donaldson Whiteman, Pa.
 Edgar Lucis Wilder, Vt.
 Benjamin Hicks Williams, Ga.
 David Morris Wilson, N. Y.
 Charles Alberto Bland, N. C.
 Charles Wallace Boucher, Md.
 Harvey Vankirk Bradshaw, Pa.
 Baskerville Bridgforth, Va.
 Burt Bernard Brumbaugh, Pa.
 Robert Steele Cole, N. C.
 Edwin Davis, Pa.
 Willey Clark Dawson, W. Va.
 Jacob William Derlin, Md.
 John Saylor Donaldson, D. D. S., Colo.
 Howard Roswell Fonda, Vt.
 Harley Brooks Ford, Canada.
 Fred Allen Ford, N. Y.
 Alexander Francis, Md.
 Isaac Abner Frazer, Cal.
 Emile Grosheintz, D. D. S., Switz'd.
 Clarkson Newberry Guyer, Col.
 George Felder Hair, S. C.

Charles Edward Hamilton, Ga.
 William Irvine Hatch, B. A., S. C.
 Ernest Paul Keerans, N. C.
 Clinton Kenney, Conn.
 Frederick Henry Kestler, Cal.
 Edward Thomas Ketcham, Cal.
 Harry Wilson Knauff, Pa.
 William Samuel Long, N. C.
 William Latimer Lowe, Pa.
 Henry Herbst Maloney, A. M., La.
 Edgar Watts Marven, Canada.
 James Walker Moore, Canada.
 Peter Alexander McLean, N. J.
 Ellis MacDougall, N. Y.
 John Elisha Parker, Tex.
 Leo Arthur Pusey, Va.
 Edgar Knox Rainey, Ga.
 George Harvey Sayre, N. Y.
 Albert Scott Shackelford, Tex.
 Zadoc Prescott Shaw, Me.
 John Hartwell Smith, Va.
 William Henry Stokes, N. Y.
 Clarence Hervey Terry, Tex.
 William Poole Terry, La.
 Albert Galiton Tillman, Miss.
 Eduardo Vasquez, Guat'a.
 Henry Augustin Truxillo, La.
 Charlie Hurvey Winburn, Ga.
 James Isaiah Woolverton, N. J.
 Frederic William Wright, Canada.
 James Anderson Yates, Ky.
 Robert Irving Youngs, N. Y.
 Rudolph Louis Zelenka, La.

AMERICAN COLLEGE OF DENTAL SURGERY.

The Sixth Annual Commencement Exercises of the American College of Dental Surgery were held at Hooley's Theater, Chicago, Ill., on Wednesday, March 9, 1892, at 2 P. M.

The Valedictory address was delivered by H. E. Myers, D. D. S.

The degree of Doctor of Dental Surgery was conferred upon the following named (66) graduates.

W. C. Brown.
 F. F. Brown.
 A. J. Bacon.
 W. T. Corwith.
 C. M. Cody.
 C. I. Chase.
 George Collins.
 C. L. Crossman.
 A. E. Crum.
 I. B. Carolus.
 L. M. Darling.
 P. E. Douglass.
 C. L. Davis.
 H. W. Davenport.
 E. A. Friis.
 R. M. Grimes.
 A. L. Gilmer.

V. C. Garratt.
 W. S. Graves.
 W. S. Harter.
 R. V. Hurdle.
 E. C. Hoffman.
 O. C. Hall.
 Caroline L. Hartt.
 J. Hetu.
 C. S. Irwin.
 Jennie Loretto Kelly.
 H. P. Loomis.
 C. L. H. Lennmalm.
 W. H. Lillibridge.
 J. A. Messenger.
 H. E. Meyers.
 Geo. W. Mills.
 W. N. McKay.

M. G. E. Marshall.
 C. S. Marshall.
 W. T. Morris
 A. S. Marshall.
 W. A. Nelson
 J. M. Oakes.
 I. J. Pierce
 Edgar Palmer
 Josephine D. Pfeifer.
 W. E. Pilcher.
 S. T. Rice.
 Fanny M. Rowley.
 F. C. Ross
 Adelaide F. Rix.
 W. T. Rogers.
 W. E. Sturmberg.

B. R. Simons.
 A. E. St. John.
 W. R. Smith.
 A. O. Stutenroth.
 H. F. Stempel.
 C. F. Smith.
 Lucy M. Scott
 George Steele
 Florence E. Thompson.
 C. C. Trowbridge.
 L. A. Tidball.
 H. H. Von Lackum
 S. A. Wilson.
 I. C. Ward.
 H. J. Wallin.
 V. S. Wisner.

VANDERBILT UNIVERSITY—DEPARTMENT OF DENTISTRY.

The thirteenth annual commencement exercises of the Department of Dentistry of Vanderbilt University were held at the Vendome Theater, Nashville, Tenn., on Tuesday evening, March 8, 1892.

The class oration was delivered by C. J. Washington, D. D. S.; faculty address by C. S. Stockton, D. D. S.

The number of matriculates for the session was one hundred and twenty-six.

The degree of Doctor of Dental Surgery was conferred upon the following (70) graduates by L. C. Garland, L. L. D., Chancellor of the University:

V. W. Alexander, N. Y.
 C. R. Adams, Miss.
 C. S. Allred, Ala.
 J. M. Ashburn, Tenn.
 G. M. Brown, Mich.
 L. Bland, La.
 E. A. Brown, Tex.
 F. Bartell, Ill.
 J. A. Beavers, Ala.
 J. R. Beach, Tenn.
 J. S. Brown, Miss.
 T. K. Barefield, Miss.
 J. P. Corley, Ala.
 R. H. Carratte, Iowa
 R. Z. Chapman, Ala.
 J. J. Cook, Michigan
 D. P. Cook Kentucky.
 S. C. Cawthon, Fla.
 W. J. Dillard Tex
 J. S. Dalton, Mo.
 S. K. Davidson, Ky.
 E. H. Dennison, Conn.
 C. C. Evans, Ill.
 C. Esbleman, Iowa.
 T. A. Fayette, Ala.
 F. B. Gaither, N. C.
 C. B. Graham, S. C.
 W. I. Hale, Ala.
 W. L. Hansbro, Tenn.
 A. C. Jones, Tenn.

R. A. Jones, Jr., Ala.
 W. I. Johnson, Ala.
 E. L. Kendrick, Ala.
 B. E. Kidd, Ala.
 O. G. Minglehoff, S. C.
 T. W. McKell, Miss.
 M. B. McCrary, Tenn.
 J. M. Murphree, Ala.
 C. W. Mathison, Ala.
 J. M. Millen, Tenn.
 G. Minnick, Ill.
 A. I. Newcomer, Ill.
 J. B. Penny, Mo.
 J. H. Palm, Germany.
 W. H. Powell, La.
 A. L. Pedigo, Tex.
 M. D. Steele, La.
 C. A. Sevier, Tenn.
 R. Sanderson, Ala.
 F. W. Simons, Tex.
 W. K. Slater, Tenn.
 C. C. Sims, Ark.
 N. W. Sherman, Tenn.
 M. O. Saller, Ky.
 H. E. Spencer, Miss.
 W. S. Taylor, Ky.
 R. E. Thornton, Ga.
 F. O. H. Thiele, Germany.
 C. J. Washington, Tenn.
 V. B. Warrenfells, Va.

J. D. Wise, Ala.
 F. P. Ward, Ala.
 W. L. Weathersby, Miss.
 N. F. Weatherby, Miss.
 H. W. Walker, Ga.

V. H. Ward, Miss.
 V. A. Williams, Cal.
 H. Wiggins, Tex.
 A. Walker, Ga.
 C. M. Walton, Tenn.

HOWARD UNIVERSITY—DENTAL DEPARTMENT.

The Sixth Annual Commencement Exercises of Howard University Dental Department, were held at the Congregational Church, Washington, D. C., Wednesday, April 13, 1892. The address to the graduates was delivered by Prof. Daniel S. Lamb, A. M., M. D. Conferring of degrees and address by J. E. Rankin, D. D., LL. D., President of the University. The degree of Doctor of Dental Surgery was conferred upon the following (3) graduates:

Andrew Gwathney, Virginia. Albert S. Johnson, New York.
 John MacDonald, Canada.

COLUMBIA UNIVERSITY—DENTAL DEPARTMENT.

The Fifth Annual Commencement Exercises of the Dental Department of Columbian University were held at Albaugh's Opera House, Washington, D. C., Thursday, March 17, 1892.

The address to the dental graduates was delivered by John B. Rich, D. D. S. The Valedictory by R. M. Geddings, M. D. Award of dental prize by Prof. J. Hall Lewis, D. D. S., to William L. Clark of the District of Columbia.

The degree of Doctor of Dental Surgery was conferred upon the following named (5) graduates:

John H. Burch, District of Columbia.
 William L. Clark, District of Columbia.
 Alva Sigel Roush, A. M., M. D., Ohio.

George H. Townsend, Virginia.
 Carl Trede, M. D., Germany.

TENNESSEE MEDICAL COLLEGE—DENTAL DEPARTMENT.

The Second Annual Commencement Exercises of the Dental Department of the Tennessee Medical College were held at the Opera House, Knoxville, Tenn. March 17, 1892. During the year there were forty-eight matriculates. The charge to the graduates was delivered by Prof. J. M. Masters, M. D. Address to the class by E. T. Sanford, Esq. The degree of Doctor of Dental Surgery was conferred by the Hon. Wm. Rule, Member of the Board of Trustees upon the following (8) graduates:

John H. McCallie, Idaho.
 John G. Foley, Kentucky.
 David Rees, Tennessee.
 B. F. Scott, Tennessee.

Thos. R. Donnelly, Tennessee.
 Geo. D. Rouse, South Carolina.
 Sam. Bennett, Tennessee.
 Evan B. Pennington, Tennessee.

MEMORANDA.

The price of the *Dental World* is \$1.00 per annum.

Dr D. Hayes Agnew, the renowned Surgeon of Philadelphia, is deceased.

Pyoktanin, yellow, applied to mucous patches is an excellent remedy. Use it full strength.

Dr G. L. Curtis has removed to New York city to devote his time to the practice of oral surgery.

Dr. L. N. Seymour, lately of London, England, but formerly of Asbury Park is now in San Francisco.

There has been established an Oral Institution of Mercy Hospital, at Fifteenth and Fulton Streets, Keokuk, Iowa,

A court in Florida recently rendered a decision, according to which dentists do not need any diploma to practice in that State.

The title of Dr. J. W. Cormany's paper to be read at Springfield will be "Some Needed Reforms," instead of some reforms needed, as it was printed last month.

Boro-Glycerine, one to twenty, is a good mouth wash, much better when ten minims of crude carbolic acid is added to each ounce of the solution. It may be used freely—diluted to suit.

The *Vierte Jahresschrift für Zahnheilkunde* has finished the first part of the "Index to Dental Literature" collected by Dr. Steinfield and Carl Rellner. The subject portion will begin at once.

Potassium permanganate of potash is recommended for a sterilizer of the hands prior to the performance of a surgical operation. A dilute solution of oxalic acid and hyposulphite of soda will remove the stains of the potash solution.

In a very instructive article on the "Present Problems in Evolution and Heredity," the Cartwright lectures for 1892, published in the *Medical Record* of March 5, 1892, the evolution of the cusps of human teeth is elucidated.

In *La Semaine Médicale* we find the following: Traitement des douleurs et de la fluxion d'origine dentaire, par M. le docteur Hugenschmidt. Dr. Hugenschmidt is one of our most valued foreign contributors and a leading dentist of Paris, the associate of Dr. Thos. W. Evans.

Mrs. Theresa Schrier, of Dubuque, Iowa, bought medicine to relieve her of the toothache. After applying it to her gums, her jaws and throat swelled, and after suffering great agony for several days she died last night. The opinion of the doctors is that she was poisoned by the medicine.—*Ex.*

Dr. Molar—Now the tooth is out, Mrs. Maloney. If the cavity commences to bleed, you must stand and hold your arms straight up over your head, like this.

Mrs. Maloney—Howly Saints! Av Oi shtand loike that, how will Oi ever get me ir-r-nonning done?—*Puck.*

Dr. Joseph Anthony is now a full professor of dentistry in the Royal University of Buda Pesth by act of the King of Hungary.

The American Journal of Dental Science is constantly making improvements. Not only has it added to its editorial staff Dr. Richard Grady, but it has even reduced the time of publication. The January number which was not due until April 30, has actually been delivered in our office March 26, 1892. At this rate of improvement the January, 1893, number, will be out four days ahead of time. Good for you, Bro. Gorgas.

M. Paul Dubois, of Paris, France, for many years editor of *L'Odontologie*, has retired from the editorial tripod in consequence of a change in the management of the affairs of the Ecole et Hôpital Dentaire de Paris. M. Dubois has been a most faithful and tireless worker for the school and the journal as well as a potent force in the elevation of the rank and file of dentists in France. We regret the necessity for his retirement and hope to see him again in the harness in some other capacity suited to his attainments.

The management of a dental practice is very troublesome to many, but some dentists are more troubled about how to get patients—trusting to luck for their management a little later. We think that dentists spend too many hours at the chair from day to day to accomplish the most good either for themselves or their patients. Five hours per day for operating and one hour for consultation will suffice for a comfortable income even at moderate fees, leaving some time for study and experiment during daylight.

There will be a Joint Union Meeting of the New Jersey and Pennsylvania State Dental Societies held at Cresson Springs, Penn., on July 20th, 21st and 22d.

We expect this to be one of the largest dental meetings ever held in this section of the country.

All who wish to give clinics at this meeting, which will be one of unusual interest, can communicate during April or May with T. K. Filbert, of Pottsville, Penn., Chairman of Clinic Committee for Pennsylvania Society; S. C. G. Watkins, of Montclair, N. J., Chairman of Clinic Committee for New Jersey Society.

To the Editor of the Dental Review:

The enclosed clipping was sent me by an elderly gentleman requesting my advice on the subject of "the Death of the Tooth-nerves with Advancing Age," and as I am ignorant of this being the rule I take the liberty of sending it to you for publication hoping that some light may be thrown upon this subject, and that your readers, who like myself are at some distance from the large cities, may know how "The Better Class of Dentists" "artfully saws the top of the tooth off close to the gums and after scraping and cleansing the decaying part welds the two pieces together as firm as before the operation was done."

Yours truly,

CROOKSTON, MINN.

W. A. ROBERTSON, D. D. S.

PAN AMERICAN MEDICAL CONGRESS.

This Congress will meet in the city of Washington September 5, 6, 7, 8, 1893. Section nineteen will be devoted to Oral and Dental Surgery. The official languages will be Spanish, French, English and Portuguese.

The figures which will appear in the Michigan University calendar for 1891-92 were given out recently. The total actual attendance is 2,692, which is 34 more than Harvard. The Literary department has 133 undergraduates, 49 resident graduates, 37 studying in absentia, 6 students in other departments, and 1 holder of Elisha Jones' Classical Fellowship.

The total in the other departments are ; medical 370, law 658, pharmacy 81, homœopathic 79, dental 188, total enrollment 2,706, which leaves 2,692 actual students after deducting 14 who are twice enrolled.

The students come from every State and Territory in the Union, except Georgia, New Mexico and Nevada. Fifteen foreign countries are represented, Japan, Syria, Bulgaria and South Africa being included. Michigan leads with 1,322 students ; Illinois second, with 322 ; Ohio third, 214 ; Indiana fourth, 118. The Illinois students are entered as follows : Literary 219, medical 18, law 68, pharmacy 9, homœopathic 1, dental 7.

CAUSE OF SADNESS.

"Dora must have suffered some terrible disappointment. One never sees her smile now. What is the matter?"

"Two front teeth pulled."—*Life*.

CHICAGO TOOTH-SAVING DENTAL COLLEGE.

At Auditorium Recital Hall in Chicago on Monday, March 28, 1892, diplomas were conferred on the following named (7) persons : J. D. Burns, G. C. Gagnon, C. A. Horsford, H. C. Miller, G. W. Ray, J. C. Scott and C. F. Smith.

ILLINOIS STATE DENTAL SOCIETY.

The twenty-eighth annual meeting of the Illinois State Dental Society will be held at Springfield, Ill., May 10-13, 1892. The State Board of Dental Examiners meet at the same time and place. The profession generally is cordially invited.

LOUIS OTTOFF, *Secretary*,
70 Dearborn St., Chicago.

DENTAL HOSPITAL OF LONDON.

During the year 1891 the enormous number of 13,392 plastics and tinfoil fillings were inserted for the patients of that institution. Five thousand one hundred and fifty-eight gold fillings were inserted during the same year and 29,317 teeth were extracted. Irregularities of the teeth were treated in 962 cases. Compared with 1874, where 1,292 gold fillings, and 2,264 of other materials inserted.

The school is growing in its value to the people of the metropolis of the world.

CHICAGO COLLEGE OF DENTAL SURGERY.

At the eighth annual meeting of the Alumni Association of the above institution the following officers were elected :

President—C. E. Bentley ; First Vice President, A. H. Peck ; Second Vice President, D. M. Gallie ; Third Vice President, A. B. Allen ; Fourth Vice President W. T. Reeves ; Secretary and Treasurer, U. G. Poyer ; Executive Committee W. Girling, Chairman ; R. R. Powell and A. Gunther. Members of board of counselors for the College : R. B. Tuller, one year, H. H. Wilson, two years.

THE DENTAL REVIEW.

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CHICAGO, MAY 15, 1892.

No. 5.

ORIGINAL COMMUNICATIONS.

ORAL HYGIENE.

By J. W. WASSALL, M. D., D. D. S., CHICAGO, ILL.

A PLEA FOR THE PREVENTION OF DENTAL DISEASES BY THE ESTABLISHMENT OF PROPER HABITS OF CLEANLINESS.

All statistics of civilized communities prove a gradual amelioration and prolongation of human life.

Mr. George H. Knight in an article published in the February number of the *Cosmopolitan*, makes the pertinent statement that for the decade ending 1860, A. D., the annual death rate for New York city was 33.66 per thousand. For the semi-decade ending 1865 it had fallen to 31.33 and in the semi-decade ending 1890 to 25.54; the rate for 1890 being 24.58. This amounts to a saving in the city mentioned of 3,000 lives annually. These results are attributed to the advance of medical science and of State and personal hygiene.

The same writer has it that the average life in Great Britain is nine years longer than it was fifty years ago.

It was the knowledge of these or similar authentic statistics, no doubt, which led Dr. J. Y. Crawford, at the recent banquet given to the Executive Committee of the World's Columbia Dental Congress—rather too warmly perhaps—to claim that modern dental science had exerted greater potency than all other causes in bringing about this felicitous result. No intelligent observer will deny that the great awakening of civilized man, particularly noticeable in the States, as to the importance of preserving the

natural teeth, has in the last half century, been a perceptible influence in bringing about the increased longevity alluded to. The profession of dentistry then bears a more important relation to human progress and comfort than is usually admitted even by the profession itself. To realize the truth of this statement one has but to picture to himself the unequal odds in the struggle for life, of a community without the services of conservative dentistry, say for four generations. In other words the proposition is tenable that a man with defective teeth is to that extent unfitted to fulfill the requirements of human life and activity.

Medical science, which in its broadest sense includes the practice of dentistry, has two purposes—restoration of the abnormal to normal, and prevention of the abnormal. We have to do tonight with the latter question, and the task to which I have set myself is to endeavor to bring out, in some small measure, the part to be played by prophylactic dentistry in the department of preventive medicine.

The scientific and modern practice of dentistry implies that, along with the restorative measures applied by dental surgery to the correction of lesions of the teeth, must go the combative or preventative measures supplied by the observance of rules of oral hygiene.

Generally speaking, the whole range of pathological conditions to which the teeth are subject, may be classified under two heads:

1. Diseases affecting the crowns of the teeth.
2. Disease affecting the roots and socket. Except traumatic lesions, both these classes of disease are preventable by conscientiously following strict rules of hygiene. An attempt will be made later on to formulate these rules.

It requires no argument to persuade you of the truth of the hypothesis that "the disease known as dental caries will not occur except where the causal microbes are permitted to grow undisturbed upon the teeth." The rational conclusion is then, that if the teeth are not allowed to accumulate deposits upon either their exposed or protected surfaces, they will be exempt from caries. More broadly stated the proposition is:

Given the varying predispositions of different individuals to caries, which is governed by the laws of heredity and environment, the growth of microorganisms in the mouth is in proportion to the

amount of disturbance they suffer, or, rest and opportunity they enjoy. That is a recognized fact, and almost axiomatic, I believe.

Is the practice of dentists as followed in the daily routine of seeing patients consistent with these undisputed etiological facts? We all know it is not.

Plainly, then, one great step in the direction of the establishing of correct habits of cleansing the teeth in the general public is to be accomplished by reform of the dentist, making obligatory upon him the performance of his duty. Similarly, as public sentiment now requires a man to be a graduate of a reputable college before entering upon practice, so can it compel him to teach oral hygiene and require his patients to observe its rules.

For the purpose of convenience, allow me to place people in three classes with respect to the care they give their teeth: Let us say that a certain number of people—the figures do not pretend to be accurate—by assiduous, intelligent care and a natural tendency to cleanliness in the teeth themselves, have absolutely clean teeth from year to year; the proportion is very small indeed, say one per cent. A second class are just as anxious and spend as much time or perhaps more, than class one, but their efforts are ineffective because misdirected and on account of unsuitable cleansing implements and materials. This class constitutes say nine per cent. All the others who give slovenly or no care, belong to class three, forming the largest proportion, namely, ninety per cent.

If we are justified in assuming that caries and pyorrhœa alveolaris, the two diseases most destructive to the teeth, only occur in the presence of foreign matter which is allowed to accumulate upon them, we next want to know how to prevent the accumulations.

My own belief is, that it is possible in most cases for the individual to keep the teeth absolutely free from all deposits and food debris. I have been led to this belief by the study of several cases which have been under my care and observation for some time past.

The following would be the way of dealing with a person belonging to Class II. or III. who makes the periodical visit to have the mouth put in order.

At the first appointment, examine the mouth as to the degree of cleanliness usual to the person, and make a note of the conditions in the record book for future reference. Catechize the person to ascertain what are the present habits as to the number of

brushings per diem. dentifrices, floss, tooth pick, etc. Make notes of each point. Then *show* to the person with mirrors every part of the teeth which is unclean. The patient may apologetically, or even indignantly say that it is impossible to be more thorough than he is. It is not prudent to deny this at the time if you wish to accomplish your purpose, unless to explain that you may be able to help him to be more successful. You must gain his good will and inspire the desire by giving arguments for *ordinary* (ordinary in its new sense) cleanliness and explaining its benefits.

It is now proper to scale and polish perfectly each tooth. The mirrors should now be used again to show the patient the change. Now is your time to teach a lesson of the most forcible kind. Say to him: "it is quite possible for you, by your own efforts, to keep every tooth in your mouth absolutely clean." Make this statement positively and dogmatically. With the effrontery, if you please, of a bichloride of gold doser promising his dupe a sure cure. The moral effect of such an assurance and the placing of the responsibility where it belongs will be very helpful.

The instructions in the daily care to be given the teeth should now be distinctly and carefully impressed upon the patient's mind. Printed direction for children might be useful but I have never tried them.

Now, you may say all this and more—some people will require the habit easily—others, never. It is your business to labor patiently to the right end.

At the next appointment, for a filling, perhaps make inquiries to see that your instructions have been followed. If they have not in every detail, reassert the necessity for it, refreshing the patient's mind and, in some cases, demonstrate with a brush the practicability of your statements. Be careful not to lay down more rules than can be followed.

This system of following up the matter as long as the appointments last, seeing to it that the patient's efforts are sustained and effective and that the *habit is formed*, are the most important and valuable services you can render in your capacity as a dentist.

The task is not a thankless one; your labor will invariably be highly appreciated, and as these patients come back to you from time to time, it will be one of the greatest satisfactions of your professional experience to be able to say, after the most conscientious

examination with the most searching of fine explorers, that you find no decay—no pockets.

Now as to rules: Of first importance, of course, is the use of the brush. *Twice* daily is sufficient—at night before retiring and in the morning. It is of the utmost advantage to have three brushes in use. This is imperatively required—*three brushes*. A brush will not do effective work unless it has time to dry out. The bristles will always be too soft if it is used more than once in twenty-four hours. More good is obtained by this than one would expect without trying. What is known to the dealers as “medium” grade of stiffness is the best. To the well kept mouth with all its parts and members in a healthy state, a good vigorous brushing with a moderately stiff brush is a pleasurable sensation. Three brushes in use at the same time will also give longer service than if bought consecutively.

The usual instructions as to vertical movements should be given. Special directions are necessary to make the patient reach all the accessible surfaces. Remember that few people do this. It becomes your duty to dispel the common delusion that the last molars and lingual surfaces cannot be brushed. Any one can touch all these surfaces who will use his brain, and for a time watch himself during the process. The old slovenly or thoughtless habit is to be broken up and a new set of movements learned. Insist on thoroughness, and keep on insisting.

Dentifrices: Some form of powder is the only proper dentifrice and it should always be used whenever the brush is used.

A pound can or bottle from which the small bottle for present use may be replenished is indispensable in preventing a giving out of the supply and a consequent deposit of calculus by a few days' forgetfulness to go to the druggist. Aim to make the powder as agreeable as possible, especially for the children.

Women and children can be induced to use floss silk or rubber bands for interdental spaces at least once a day. Men should be encouraged to use the toothpick.

Disinfectant and antiseptic washes are allowable and useful, but should not take the place of powder applied by brush at the stated intervals. As a rule I recommend it only in special cases. The best results are obtained by the simplest means faithfully employed. It is more than probable that the individual whom we have in hand will have anywhere from three to a dozen appointments

for the other needed operations. Opportunities are thus afforded, to assist in putting him on the right track. You have given him a good start—how shall he be watched?

One or two months later, by previous arrangement, he must be summoned to your office for inspection. Perhaps—yes usually—a little scolding and lecturing will be necessary to put him right. At suitable intervals he must be notified again and both of you will be delighted at the fine appearance and freedom from disease presented.

My own experience is that it is not a difficult matter to bring about this happy condition and one success repays for a score of failures.

RESUME.

A statement to the patient of the advantages and desirability of absolute cleanliness of the teeth.

Namely, that it affords immunity from caries of crown and loosening of tooth in socket.

Economy of time.

Economy of money.

Economy of pain: And preservation of natural teeth all through life.

A statement of the means to be employed to maintain absolute cleanliness of the teeth.

Establishment of habit.

Three brushes for daily use.

Thorough brushing of labial and lingual surfaces twice daily with powder.

Silk, rubber bands or pick.

Regular visitation by appointments for inspection and instruction.

INTRODUCTORY LECTURE TO MEDICAL STUDENTS.

BY OTTO ARNOLD, D.D.S., COLUMBUS, O.

GENTLEMEN:—We are about to begin again a short series of lectures, in which I propose to consider a branch of the healing art that is intimately related to general medicine, and yet is not ordinarily included in the practice of the general physician.

I know not how many of you propose to devote your energies to special practice when the time for choosing your life work comes, I feel safe however in predicting, that few if any of

my hearers have as yet concluded to practice dentistry exclusively.

I have, however, confidence enough in your judgment to believe, that you are willing to enlarge the horizon of your professional knowledge, and that you will take an earnest interest in the subjects I am about to present to you.

The faculty and custodians of this institution, believe that the profession of medicine is a complete system, embracing within its extent in the broadest sense, all of the principles of practice that have for their aim the welfare of the human body—the continuation of ease, the arrest of disease.

Thus it matters not how much you may divide the system into branches or specialties, or how small you limit the territory of the body to which the respective specialties confine their attention; each and all of them are subservient to the principles which govern the whole and therefore cannot in any other light be earnestly considered.

This is peculiarly the age of specialties. In every branch of labor the tendency is toward divisions, and is only a natural effect of the demand for thoroughness and the result of progress. The medical profession is abreast the times, and as a result we have the numerous medical subdivisions or specialties, each offering a limitless field for research and practice to its followers.

Dentistry claims an equal share of honor with the other branches of medicine, and (has been) so recognized among the progressive and enlightened men of science in all times.

A popular impression quite generally prevails, that dentistry is a modern science. If we consider dentistry as an independent profession, we can trace its origin within the present century. Indeed, the first dental college in the world began its first session only in the year 1840 in the city of Baltimore. About the same time also the first dental association was organized in the city of New York.

If we consider dentistry as a specialty of medicine, we can find mention of it 500 years before the Christian era by Herodotus, who, in narrating his travels through Egypt, "then one of the greatest and most civilized nations of the world," noticed the divisions of medicines in that kingdom into special branches, and the existence of physicians, each of whom, says the historian, "applies himself to one disease only and not more. Some are for the eyes, others for the head, others for the teeth and others for internal dis-

orders." Teeth containing gold fillings, teeth giving evidences of other operations having been performed upon them, yea, even "artificial teeth without plates," or bridgework, which is now so graphically heralded in the public press as a new discovery, have all been frequently found in the mouths of mummies.

Whether dentistry is a specialty of medicine or an independent profession is even now a mooted question in the minds of many equally learned men. About fifty years ago the progressive men practicing dentistry (among whom were some of the brightest lights in science and medicine), recognizing the narrow field of usefulness and the limited scientific knowledge which was the stock in trade of the average practitioner of dentistry at that time, began to agitate a reform, and advocated the adoption of an organized system for the teaching of dentistry on a scientific basis, by adding a chair on that branch to the curriculum in the medical schools. Such a plan was not entertained with favor by the authorities of the latter, however, and other means had to be sought to accomplish the aims of these reformers. Nothing daunted they continued their energies, which ultimately resulted in establishing the first dental college, soon to be followed by others.

If at that time the medical colleges had granted the requests of the dentists, even as an experiment, I doubt if we would ever have known of a dental college. The founding, however, of a special college conferring a special degree upon its graduates, was a decisive declaration of independence, and thus, as it were, a new profession was born. This event marked the beginning of a new era, to which is probably due the impression that dentistry is a modern science.

To American dentists is due the honor of organizing the first association of dentists, and founding the first institution for teaching the art and science to its matriculates. In recent years, many medical colleges and universities in this and foreign countries, have added dental departments to their curricula, where both medical and dental students may "drink deep from the Pierian spring." About five years ago a section on dental and oral surgery was established in the American Medical Association, which event ought forever to settle the relationship of each to the other.

The further genesis and evolution of dentistry in detail, however, is not of so much importance to you as the question, has dentistry as practical to-day, anything in it that you as medical men would

profit by knowing? I shall endeavor to confine myself now to answering this question.

There are some details in the practice of dentistry that you may afford to ignore; there are no principles involved, however, but that knowing them would make you better physicians. Our callings are built on the same broad platform, the foundation of which contains the principles of anatomy, physiology and chemistry; and while the superstructure may divide and ramify in divers directions, the end sought is nevertheless the same.

Man is a complete being with many organs and members. Some of these are necessary for his comfort and convenience, others are for ornament and symmetry; while some are for the protection of others, and some are absolutely essential for maintaining life. Some of these organs or members may become more or less injured or wholly lost, yet the man continues to live.

It is a familiar sight to see along the common thoroughfares throughout the world, men and women with one or more limbs missing, or figures so distorted as to be almost unrecognizable as human beings. One can visit either of two of our State institutions located in this city, and witness in the one a community minus the sense of hearing, in the other a community with the organs of sight either partially or wholly impaired. Indeed, one is sometimes struck with wonder and amazement, when he realizes how small a portion of the whole of man may continue in vital existence.

In view of these facts that are constantly before us, do you in any degree relax your efforts in the pursuit of knowledge, that will qualify you to preserve the human body in its entirety? None of you I dare say will make such admissions.

We must admit, however, that certain limbs and organs are more important than others. Particularly is this true of such, which by training and cultivation have become peculiarly fitted to perform certain offices. Thus, the occupation of a violinist would be gone should he lose an arm; the painter's labors would cease with the loss of sight.

The amount of responsibility resting with the surgeon, depends much upon whether the repair of an injury or the loss of a part, will or will not unfit the injured to continue in the pursuit of his occupation. While the responsibility assumed may in the one case be grave, in the other insignificant by contrast, the surgeon if

true to his calling, would in either case put forward his best knowledge, skill and judgment to conserve every member of the body.

What is true of the limbs, eyes and other parts of the body, is in a great measure also true of the teeth and their environments. These valuable organs were never intended, any more than others, for reckless sacrifice. Nor, should they if in any sense diseased, be permitted to remain so, since the science of dentistry is almost limitless in facilities for restoring them to health and usefulness. The zealous dental surgeon is as proud of his results in saving teeth as is the general practitioner in his results upon other portions of the body.

Man at maturity is by nature endowed with thirty-two teeth. This is not a mistake or a *freak* of nature. There is no more chance about this process than in those which provide him with two eyes, two legs or one nose. If this is a fixed law of nature, and granting there are no mistakes in the rule, it must be evident that the teeth are designed to subserve certain and useful purposes, and that they sustain important relations to the system in general.

Yet these organs are criminally neglected and ruthlessly sacrificed, which sooner or later must bring its perils. One can find in nearly every household some one who is either partially or entirely toothless. What a commentary on civilization! That in this age and generation vast numbers of people are so little concerned about an important part of their bodies, that they will submit to the most intense pain flesh is heir to, endure untold torture and finally resort to the means which promises the speediest relief—slaughter of the innocents.

Within the shadows of our offices, thousands of teeth are neglected and sacrificed annually. A host of mangled and distorted mouthed victims meet you everywhere. Who is to blame for this needless suffering or sacrifice? No doubt, the sufferers themselves are entitled to the greatest share of censure, for their neglect and indifference. But I venture the assertion, that this evil would to a great extent diminish by education.

Many of these same individuals are often painstaking and fastidious enough about the care of other portions of their bodies, thus the contrast becomes all the more marked and censure more deserved.

Throughout the masses there prevails an astounding amount of ignorance concerning the value and importance of these organs and before any revolution takes place that can change the evil results from such practice, this class must be enlightened to appreciate the influence for good the change would bring about.

The responsibility of enlightening the masses against the prevailing ignorance in this matter, must to a large extent be taken by the medical profession. You are the medium through which must come the teaching, that no part of the human body can be neglected without more or less serious consequences to the whole, stimulating them to adopt habits and means for the preservation of the whole of man. It will be your privilege, and you must make it your duty to disseminate knowledge that will benefit the human race. You are in a position to make impressions where others would fail. Your commands are law and will be obeyed.

When we consider the functions of the teeth, we find their chief and relative value to the economy consists in the part they perform in the act of mastication. Grinding and triturating the food, permitting its thorough admixture with the saliva during the act. In short, preparing the food that is taken into the mouth in the most desirable and acceptable form for the stomach.

You all know, that perfect mastication is an essential auxiliary to the digestive process. It is not difficult to comprehend that with defects in the dental apparatus whereby this act is impaired, either by decayed and sensitive teeth, or a limited number of them, or, from the presence of vitiated secretions due to pathological conditions within the mouth, it devolves upon the stomach to do excessive work, and such abuse long continued must sooner or later bring forth the inevitable evil results. This is a prevalent condition which physicians, indirectly at least, can prevent.

It is not our purpose to inveigle you into the practice of dentistry, but, I believe every physician ought to know enough of its principles to recognize the indications for extracting diseased teeth or treating them as the case may be, and insist upon the adoption of remedial means when needed.

There are many lesions reflex in their expression, whose source is in or about diseased teeth. The physician should be able to trace the connection of neuralgia and other nervous disturbances that may have their origin in dental territory. The extension of disease by continuity and contiguity of time is no less likely in the

oral cavity than elsewhere. The maxillary sinus is a prolific field or harboring pathological conditions. Teeth that to the inexperienced present no indications of abnormality, often contain the cause of obstinate and destructive lesions within this cavity.

These are some of the many, and are of the ordinary type of complications having their origin from dental causes, in the treatment of which a dental education would prove a valuable acquisition. Physicians as a rule have in the past too much ignored this part of the body. As far as it concerned a goodly number of them, the mouth was never regarded as a possible factor, in which might be found the solution of the problem to many otherwise obscure lesions. I well remember this statement once made within my hearing by an eminent surgeon in a dental meeting, "that the medical profession confined their energies altogether too much to the other end of the alimentary canal."

Upon the other hand, dentists should know enough of general medicine to be able to discriminate between strictly dental and general lesions, which would enable them to give patients in their care needing medical advice and treatment, such counsel and direction that they may secure the proper service. We can best subserve the interests of suffering humanity by mutual relations, making our callings reciprocal in practice.

Dental caries, which is the beginning or primary cause of most diseases of the dental type, is one of the most universal afflictions man is heir to. Few indeed entirely escape its attack, and yet it is to a considerable extent preventable. To secure the preventable state in the highest degree, surround the mouth and teeth with proper hygienic conditions. This is within the reach of all and consists in cleanliness. The thorough use of the tooth-brush in combination with a suitable dentifrice, is as yet the best known prophylactic. When caries already exist, they should be arrested by suitable operations at the earliest possible moment, which will restore the teeth to practically as good conditions as before.

That the teeth when diseased are possible etiological factors in systematic disorders should never be lost sight of. Septicæmia from chronic abscesses about them may be more prevalent than you imagine, and it would be commendable practice to search in the mouth for causes that are not elsewhere apparent.

Mouths devoid of cleanliness offer an inviting abiding place

and a fertile field for the propagation of microorganisms and bacteria. Professor Miller, of Berlin, a distinguished dentist and scientist, discovered seventeen varieties of microorganisms that infest the mouth. He found, he says, in one human mouth, "one is strongly tempted to add inhuman, at one time present, one billion one hundred and seventy million germs."

Gentlemen, the evil influences exerted by such conditions, and they are numerous, upon the general health, need hardly be explained to you, nor could we estimate with even an approximate degree of accuracy the number of germs which would daily be received into the stomach of such a beastly individual.

It would be an easy task to prolong this subject, but I must bring this desultory discussion to an end. I will state further in closing, that the methods applicable for the treatment of dental caries are scientific, effective and definite in result. They are to a large extent mechanical, yet altogether in connection with living tissue, requiring that the simplest operations be performed with delicacy and precision, and in harmony with the law that continues the vital state, which is the very essence of surgery. When these operations are supplemented with the proper treatment for the correction of the oral secretions, the removal of foreign deposits, etc., etc., we are able to transform an offensive and disease-breeding condition into a healthy and wholesome one.

As physicians, you will have abundant opportunities to direct and advise, and in a large measure limit the extent of afflictions from dental causes. If you are well prepared for recognizing abnormal conditions within the oral cavity you are to that extent more thorough physicians.

Those of you who will practice in the sparsely settled or rural districts, may have frequent demands made upon you to relieve the sufferings from diseased teeth, therefore have special occasions for acquiring knowledge in that direction. You whose lot will be cast in more populous places and cities, will find it often an advantage to consult with, and combine the skill of dentists with your own in the management of peculiar cases.

This is being recognized as a healthful custom and is increasing. It is a source of gratification to note the growing interest manifested in dental practice by the best physicians, likewise the broader education of dentists in general medicine.

In the few lectures I shall deliver to you, the subjects will be

selected with special reference to what will be of the greatest benefit to you, and treated as broadly as their nature seems to demand. The cause and development of dental caries and its general treatment. The dental pulps and pericementum, their functions and diseases; alveolar abscess, its causes and treatment; the indications for extracting teeth, when and how to extract them. These are the subjects we may consider with more or less detail, endeavoring to avoid wearisomeness.

Not attempting to make dentists of you, but helping to make broader medical men, who shall realize the importance to the whole of man of a cure for this part intrusted to the dentist's care. That dentists and doctors are not natural born enemies, jealously warding each other off their particular premises; but fellow soldiers fighting side by side in a common warfare against their common enemy—death and disease.

FACIAL NEURALGIA.

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILL.

Definition: Pain, constant or remitting, usually from irritation of one or more branches of the nerve, occasionally from structural impairment of the nerve, functional or sensory. It may be reflex, but the most overwhelming symptom is always pain and exacerbation, generally localized. There are many causes of pain which I will not catalogue, as most of you are familiar with them. The form of facial neuralgia to which I direct your special notice is that connected with or dependent upon diseases of the teeth. We must eliminate from consideration, this evening, these constrictions of branches of the fifth pair not connected with the jaws themselves. Probably all are familiar with cases of pain in the jaws from exposure of a pulp. When this is discovered the manifest duty of the surgeon is to afford a protection direct, when the pain will cease. It may be said here that nearly all pains in the jaws or in the region of the temples originate from defective teeth. I have found in a few instances that a tooth was split from concussion of the jaw from falling from a ladder or other eminence, and after fairly searching for the cause of pain suddenly was rewarded by discovering its true source. Recently I found a cavity in the cementum of a cuspid tooth at least one-eighth of an inch from the edge of the gum margin. By retracting the gum and applying an appropriate remedy the pain ceased. Without multiplying the unusual causes of pain connected with the teeth, such as

impacted teeth, or the pressure of a plate or other mechanical device causing direct pain, or even considering concealed roots of teeth in the jaws, or reflex neuralgia from displacement of the uterus, foreign bodies in the antrum, or engorgement of the maxillary sinus, necrosis, mercurial or other poisoning by drugs, formation of pulp stones, exostosis or other anomalous dental growths or formations.

I desire to draw your attention to three causes of pain in the jaws that have as yet received little attention, namely: the protrusion of root fillings through the apices of roots, the incomplete sterilization of poisoned dentine and exposure of the pulp from pyorrhœa alveolaris.

From some observations of the labors of others in the filling of roots I have come to this conclusion: Any method of root filling which will permit of the passage of metals, wood, or any corrosive substance through the apex of the root (unless the metal be lead) is liable to give rise to a not easily diagnosed neuralgia, more or less constant, with intervals of freedom from pain, but the absolute certainty of recurrence after any or all forms of constitutional exhibition of remedies. This kind of root filling is practiced to a very large extent, especially by a class of men who are desirous of making a crown or bridge at a single sitting, or from haste to complete the operation of filling a tooth in the shortest possible time. At first the patient suffers little or no inconvenience, but after the lapse of a few months or a year or two, pain is felt either in the region of the tooth so filled or in a vacant space in the opposite jaw on the same side of the mouth. You may ask why such foreign bodies are not encysted? I answer at once they are not isolated like a piece of leaden bullet or a pellet of gold forced through the root, but are projections from the apex of a tooth's root. They may be and are frequently pointed, sharp, and may impinge on some portion of the anterior, middle or posterior dental branches of the superior maxillary branch of the fifth pair of nerves—or even on some twig of the mental nerve or the inferior dental—more often however in the superior than in the inferior jaw. What is the remedy? Taboo such practices for the future and remove the root filling of this character for this generation as rapidly as possible.

In all cases where there is a persistent neuralgia without apparent cause, other than a filled pulpless root I immediately suspect the presence of a protruding root filling of wood, gold,

silver, or some corrosive substance as oxychloride or oxyphosphate of zinc. For the cure of such cases removal of the root filling or extraction of the tooth is a necessity.

It may seem that the second of the previously unconsidered cases of facial neuralgia "incomplete sterilization of dentine" had little to rest upon, but I assure you that it is a potent cause of pain more or less intermittent and for that reason often overlooked. At some time or other the roots of all pulpless teeth, save the few that are filled at once after pulp extraction are exposed to septic influences, through the saliva, water, food or the air. Even in some cases to the defilement of unclean instruments. When a tooth has been for a considerable period subjected to the retention in its interior of a putrescing pulp or other decomposing animal or vegetable matters, it stands to reason that the dentine will absorb the mephitic gases and other septic poisons which are usually present. The dentine of the densest tooth will not withstand for even a short period the invasion of microorganisms per the soluble ferments excreted, when the pulp is alive, how then is it to be rendered immune after the loss of that organ? I affirm that it is not possible.

If you will recall for a minute that the animal matter of dentine, in a normal state is nearly equal to one-third of the whole of its substance and a portion of this being water, you will readily see that there is a considerable portion of the substance ready to imbibe, or absorb; or become saturated, or infiltrated with septic, gaseous and pigmented matters. Some or all of these forms of impregnation will effect the dentine according to its density, now suppose that the dentist more or less hurriedly washes the interior of the root with warm water, then dries it indifferently, afterward bathing or swabbing the canal with an antiseptic for five or ten minutes, perhaps cuts out a small portion of the dentine with a bur or reamer then fills at once. Does this practice save the tooth from further destruction and render it innocuous as a source of pain? I say no, because it is not sterilized by such a procedure.

There is no disinfectant so potent that it will disinfect polluted dentine in such short order. More time must be given with one or more days for its penetration or diffusion to reach and destroy the stored poisons in the dentine. What relation has this to the subject of facial neuralgia. I will tell you as far as I know. After the lapse of two or three years a tooth so treated and filled

will begin to trouble its possessor by being the source of pain, at first slight, but after a time more constant until it may become localized by the formation of a small abscess on the side of the root. How is this brought about? By the gradual impairment of the cementum and pericementum through the influence of the concealed poisons and gases in the unsterilized dentine. This will occur even though the apex of the root be thoroughly well filled, as I have frequently observed after the extraction of a tooth or the removal of the root filling. All persons of sedentary occupations, the anæmic, the feeble or those residing in malarial districts are frequent subjects of facial neuralgia having as its cause such hastily filled roots. What is the remedy? Take time for sterilization of the roots of teeth previously exposed for any length of time to foreign matters or putrescing pulps. Immediate pulp extirpation admits of immediate root filling under nearly all circumstances.

The third and last cause of facial neuralgia that I will dwell upon is from exposure of the pulp per the peridental membrane from advancing pyorrhœa alveolaris. The detachment of the pericementum from the root of a tooth along its side may be unnoticed by the dentist, for some time, indeed the patient will rarely be able to locate the immediate source of the pain, as I have frequently found by examination that the offending tooth was located on the opposite jaw. When possible to eliminate all of the common causes of pain in the jaws, and finding the teeth vital I pretty generally conclude that the cause of trouble is confined to one of two conditions: formation of pulp nodules or exposure of the pulp at the apical end of the tooth. An examination for "pockets" will make diagnosis certain, as the two conditions will not exist in one and the same tooth at the same time. When the true source of pain is discovered we have one of two things to do—extract the tooth or destroy the pulp. The latter is generally chosen for the reason that it may be possible to render the tooth useful to the possessor. If pulp nodules are being deposited in the substance of the pulp there are three remedies. If the patient can endure the pain long enough the pulp will be obliterated, otherwise the pulp must be destroyed or the tooth will need to be extracted in order to effect a cure. I have purposely left all reference to the use of drugs for the alleviation of pain to be brought out in the discussion, preferring that method to emphasize its importance when indicated.

SOME THOUGHTS ON THE MANIPULATION OF GOLD FOR FILLING.*

BY DR. A. W. FREEMAN, CHICAGO, ILL.

Gold is never found pure. Silver is always present with it. It is also found alloyed with lead, antimony, bismuth, iridium, platinum and iron ; often with several of these metals.

When it has been refined at the mint it is found by test to be from 993½ thousandths to 998 thousandths pure gold. The gold we use is thought to be 993 parts pure.

The silver is removed by nitric acid when the gold is left as a dark powder. Boiling sulphuric acid applied to the amorphous precipitate will so nearly remove traces of silver that the fineness is raised to 998 or 999 thousandths pure. Silver adds to the cohesiveness of gold but lessens its softness.

For many years gold was obtained from the dealers in dental goods only in the shape of soft foil, and usually was four or six thickness or about that number of grains to each leaf. These leaves were made into pellets, or cubes, or ropes, or tapes, and thus used to fill all cavities from beginning to finish of the filling. By this old time method, work was well made, which has stood thirty, forty, fifty or more years.

Fillings in general were made by hand pressure only, until 1861, when Dr. Atkinson introduced to the profession in general the use of the mallet, though in our system of dentistry its discovery or first use was accorded to Dr. E. Merritt, 1838. In 1855 Dr. Arthur discovered the cohesive properties of gold by annealing or heating some gold that did not work to suit him. A few years later there was quite a general craze over cohesive gold, from which there was a reaction until cohesive gold is now generally used to finish fillings or for building up corners and contour work.

Pellets round or oval are very convenient for use in most cavities. We take a sheet of gold and tear off pieces with the foil carriers, which with the thumb and fingers of the left hand is quickly made into a round ball. These should be made of varied sizes and densities, according to cavities where they are to be used ; but not of so great density that they will curl or roll in the cavity instead of packing where we wish them. Extremely small pellets should be made for very small cavities ; one, two or three may be

* Read before the Hayden Dental Society March, 1892.

used to nearly or quite fill such cavity, though it is usually better to finish with some small pieces of No. 4 cohesive or 30 of Roman's rolled gold, which adheres firmly and packs better or more readily than any other I have used.

Some dentists use pellets made from cylinders. We have not been able to make them quite so adaptable or packable, if we may coin the word, as those made from the sheet.

If you wish them of uniform sizes you can cut your gold into squares, by placing your gold on a leaf of paper from an empty gold book, cutting through both at the same time. The gold will not adhere to the shears, even though their cutting edges are not absolutely perfect as is desirable. We prefer a nice pair of barber's shears to the longer and more expensive S. S. W. make. Some good fillers use pellets alone for the entire work, soft gold for the major portion, and cohesive for the very last or finishing portion of the filling, discarding thick gold entirely. No. 4 foil is the preferable number.

The rope is quite a common form in which to use gold, and is adapted to a large class of fillings when made of sufficiently varied sizes cut in proper lengths. A paper cutter is placed on the center of a sheet or half sheet of gold, and it is folded back and forth until it is of narrow width, when it is rolled with a napkin on a chamois covered and padded board about five inches square; or it may be folded and then twisted to rope with the fingers, if the hands are of the class called dry or usually free from perspiration. Of course they should be clean.

These soft cylinder ropes are usually placed on end in crown cavities, protruding about one-third out of the cavity, and pressed to one or two or all sides of the cavity, and others are grasped and forced between these cylinders until the cavity is quite full, then the surplus end portion should be compactly pressed and malleted to a finish.

If the cavity is compound or crown and approximal, a layer should be placed on either side lingual and buccal, and others introduced between these, using a wedge-shaped flat plugger, until no more can be crowded between these layers, when the surplus end portion can be condensed as before mentioned.

If the cavity is not full when this is done cohesive gold can be added. A judicious use of pluggers, of the mallet and firm burn-

ishing will make a good filling of all soft gold when it is not subjected to too much strain in mastication.

We should not only cultivate strength of hand pressure, but a nicety of touch, which will assure us when our work is being thoroughly done.

Gold, except it be precipitated by sulphate of iron, is cohesive, when one leaf is laid upon another. If subjected to exposure to the atmosphere or kept in proximity to acid and gases, it loses its cohesive properties, which can be restored by heat, as we all know. Cohesive gold should be used immediately or in a short time after it is annealed, as in a few hours it becomes noncohesive. Each piece can be annealed as it is used if the quantity to be used is not large. In continuing it can be kept ready for work and time saved to heat it in a mica-bottomed tray resting over a small gas or alcohol flame. Theoretically there is an objection to the oxidation of an iron-bottomed tray, but practically we do not think it of much importance.

It is better that there should not be much surplus annealed, as frequent annealing does not improve the working qualities of the gold.

Cohesive gold should be folded in narrow strips about the width of the cavity to be covered—8, 16 or 32 thickness—or it may be used in a small loose rope. The amount of annealing required depends upon the kind of gold used and its freshness. Williams' cohesive can be used in pellets.

Small depressions and borders can be evened up by small crumpled pieces No. 4, or Rowan's No. 30.

You can start cohesive gold on soft gold by hand pressure better than by mallet, usually.

If your gold does not stick you can heat a piece red-hot and apply to the surface once or twice, and you can then proceed, unless the surface has been covered with moisture. If moistened it can be dried by a small flash flame from a string of twine run out of a slot in the side of a cork inserted in a bottle with a little alcohol in it.

It should be remembered that cohesive gold packs, but soft foil spreads, hence the latter is best, especially next the walls of cavities. If cohesive gold is used it must be used in small pieces, and packed with extreme care lest we injure the walls or leave a leaky filling.

The platinum gold foil makes the best wearing surface for abraded teeth, and some operators like the looks of it better than the all gold fillings, while some others think that it mars the looks of the teeth, giving them the appearance of poor work.

There are some cases where I want to use Watt's crystal gold, now in use for thirty-five years. It makes a very solid and durable filling. As made at present it is very reliable, being free from acids which marked some of its early make.

Instruments with medium serrations are best to pack this kind of gold.

This gold takes a firm hold of all unevenness of the cavity and does not require great force; small pieces, with uncrushed crystals and careful packing from first to last is essential. The mass cannot be changed by final malleting as with soft gold.

If you do your work well with certain makes of gold, it is better not to change because some Dental Goods man has something new—but "prove all things and hold fast that which is good."

A dentist of all persons needs a clear head, a steady hand and to be at peace with himself and his patient, or his work will be labored and faulty.

A new form of crystal gold by the S. S. White Dental Mfg. Co. seems well adapted to start fillings as it is very soft and seems to spread in the cavity. It has not had sufficient test of time to judge of its reliableness or as a full filling.

Crystalloid gold is also a very good starter.

Hand pressure and suitable pluggers will carry gold into some portions of cavities where malleting will not reach—usually surfaces or walls next to us and where we cannot see directly.

We consider it necessary to use magnifying mirrors much, as concentrating more light and giving a better idea of our progressive thoroughness.

Dryness is essential and a positive necessity to our work as a rule—but some fillings made with a slight degree of moisture before the days of rubber dam have been found to preserve teeth.

Abbey, we believe, makes or did make the only soft foil not made cohesive by heating, so said. We have seen work done with it over thirty years ago, still reliable.

Rowan's soft gold makes a very reliable filling when the gold is not too old.

Ney's gold is very even or uniform and with practice works nicely.

Packs' cylinders are a necessity with us—soft and very cohesive. Nos. $\frac{1}{2}$, $\frac{3}{4}$ and 1.

Dr. Black informs us that a bottle of carbonate of ammonia kept in a drawer with our soft gold will keep off the effect of deleterious surrounding gases, and if gold has deteriorated it will be restored to its former working properties.

Sulphur and phosphorus should be kept as far from gold as possible, as they rapidly lower its working standard.

Dr. Black also says cohesive gold will become noncohesive when subjected to the influence of the carbonate of ammonia.

Our work often varies with our own moods, now good, now better, but no one makes a perfect filling said our lamented Atkinson—yet our constant effort and aim should be for that noble end.

PULPITIS.

BY I. A. FREEMAN, D. D. S., CHICAGO, ILL.

Pulpitis, or inflammation of the pulp, is a disease the dentist is frequently called upon to treat. In many instances it is quite difficult of correct diagnosis, owing to the fact "that the dental pulp has not the sense of location or touch," being encased in the inflexible bone covering. Much reflex pain may be had and nothing to indicate what tooth may be the one involved or seat of the disturbance, hence the operator will sometimes be put to his wits end to find or locate the trouble. Sometimes it will be necessary to wait for developments, for if it be that the pulp of any tooth be in a stage of inflammation, it will as a rule pass on to suppuration. This will in most cases be the result. Then as there are the different stages of decomposition there will be corresponding disturbance in the surrounding membranes, the peridental membrane becoming involved will very soon indicate the offending pulp.

Sometimes the operator first consulted, acting upon the expectant plan, will find the patient later in the game has consulted some other practitioner, who, with the advanced stage or condition, will be more fortunate in being able to locate the trouble, for the manifestation of the now inflamed peridental membrane indicates exactly and unerringly the afflicted pulp. Now, he scores

a big card for himself, while No. 1 is left to wonder what has been the result of his treatment and suggestions. Meantime the patient has no doubt who is learned and skillful, having been relieved of his pain in a moment by the operator last consulted. He having opened the pulp chamber, giving escape to the pent-up gases, the product of decomposition : of course, the patient has almost immediate relief, this may occur when there has not been but little pathological change in the tissue of which the pulp is made up or composed.

The books lay down symptoms by which we may be able to determine when we have a case of inflammation of the pulp as against that of hyperæmia, and undertake to tell us where inflammation begins with the aid of hyperæmia to become a settled condition, but we will leave that for the discussion of the more scientific and pass on to some of the causes of inflammation of the pulp.

I find the term pulpitis is a word that is one of convenience used outside of medical dictionaries, a word known only to the dental profession. The causes of pulp irritation are quite numerous ; among them are dental caries from the most superficial to the deep-seated where there has resulted full exposure to foreign substances, fluids, etc. Where these may, by the process of endosmosis, have entered the pulp chamber, or the forces of mastication may have proved too powerful for the weakened covering, and so from yielding walls the pulp has received injury, which becomes, by the constriction of space, an irritant, resulting in inflammation prolonged, intense pain being the result unless the pressure upon the pulp be immediately relieved by excavation and opening up fully the pulp chamber or lessening its volume by evacuation of the gorged vessels by incision of the tissue, and both should as a rule give desired relief from pain.

Traumatic affection of surrounding parts may result in inflammation of the pulp, especially in young patients. Operations upon the teeth in preparation of cavities, excavating the diseased tissue resulting in partial or complete exposure ; attempts to protect the pulp by introducing some form of filling material, causing by its irritating properties either galvanic, escharotic, dessicating, or conducting power and also carelessness in introduction, too great force being exerted in placing the materials in position.

Predisposition to inflammatory action has much to do with the phenomena of pulpitis.

I here refer to rheumatic tendencies, or a predisposition also to the condition noticed in young girls about the age of puberty, who take on inflammatory diseases readily. Practitioners generally have noticed that greater disturbance is seen in thermal changes at this time, and there is probably greater tendency to acidity of the secretions which may and does promote galvanic action, if gold, tin or amalgam are in the proximal surface or in close proximity to each other. Inflammation may be general or local, active, displaying considerable energy by producing severe pain, or may be what may be termed a low state or condition of inflammation, the disturbance being nonexpressionless, so to speak, a condition which may exist for some time with so light inconvenience to the patient as to be quite forgotten at times, passing on to the stage of suppuration or may become of the nature of dry gangrene.

Pulpitis may and does occur when teeth are being moved by regulating appliances, not always when force has been applied with which the teeth have been moved rapidly, but when the movement has been slowly and carefully performed, resulting in what has been termed dry gangrene or mumification of the pulp. Not always so, but this condition is seen where from the color of the tooth we know the pulp has died, and when opening into the pulp canal nothing is found save the dry, or nearly so, remains of the defunct pulp. This tooth has never given the slightest inconvenience it may be. Dry gangrene is seen frequently where there has not been any effort to regulate or change the position, and when able to get a history we hear that a blow was received at some time previous, it may be years since, and no inconvenience during the subsequent time save a slight uneasiness at times. The too energetic application of force, in gaining space for fillings, results in pulpitis to a greater or less degree. Pulp nodules are a source of irritation.

The treatment for the different phases of pulpitis are somewhat variable.

In the case of superficial caries the proper procedure is to remove the diseased tissue and apply a remedy containing a disinfecting and anæsthetic property; at the same time; ten per cent carbolic acid, oil of cloves, oil of cajuput, oil of cassia, contain these properties sufficiently for these conditions. Then fill the cavity, thus excluding foreign irritating substances or fluids. In

more advanced stages of dental caries a non-conductive material should be placed upon the floor of the cavity, it having previously been treated as suggested for superficial cavities.

Treatment for pulpitis, which is the result of deep-seated caries, the pulp not fully exposed, or if it be very slightly so, would be to clear cavity of the debris, wash with quite warm water. Pond's extract of *hæmmamalis* should also be warm. A mild solution of boracic acid thrown gently into the cavity with syringe, the object being to clear the cavity of all extraneous matter, using those agents that will be of a palliative nature. Peroxide of hydrogen will be found helpful here. All decalcified dentine should be carefully cut away, meantime the cavity should be protected from fluids of the oral cavity by the rubber dam being adjusted. When all this has been satisfactorily performed, the cavity dried, then bathe the cavity with carbolic acid about twenty per cent solution. Again dry, flow over the floor of the cavity a thick solution of gutta-percha and chloroform, allow time for pretty perfect evaporation of the chloroform, then varnish the entire cavity with copal ether varnish, or you may use sandarac varnish. This is to prevent the drinking up of the moisture of the tooth or pulp by the material that follows which may be oxychloride or oxyphosphate of zinc, which should be of a consistency to be drawn over the floor of the cavity rather than forced down upon the exposed pulp or yielding floor or wall of cavity, thus saving the crowding of the pulp. The better plan is to use a small portion at first, giving time for hardening, and add more as it is needed to make a strong floor and be of depth or thickness to aid in breaking up thermal changes or shock. This course is to be pursued where there are no complications to be met with, as, for instance, where there is so great exposure as to determine the necessity of expiration of the pulp, which would be usually performed by first giving treatment to reduce inflammation, and then to devitalize by the application of arsenious acid which should always be held in position by using first a drop of chloro-percha over arsenic, which should be allowed to harden, apply carefully oxyphosphate of zinc for filling cavity, thus giving an inflexible covering so that pain may not result when mastication is going on. Of course, later the pulp should be removed, not forgetting the application of glyceride of tannin to bring about the most desirable condition, the removing of the pulp entire. Should death of the pulp from inflammation have resulted,

the usual treatment for putrescent pulp is of course indicated. In all conditions of pulpitis a hot mustard foot bath is helpful, also counter-irritation may aid in aborting strangulated pulp by determining the blood to other parts. Saline cathartics have been recommended, and no doubt may have good effect upon plethoric patients.

ALUMINUM.*

BY GEO. W. HASKINS, M. D., D. D. S., CHICAGO, ILL.

I desire this evening to call your attention to a few facts relative to that most interesting of metals, aluminum; interesting because of the great possibilities which its cheap production fore-shadows; interesting because it is a new metal which is not a laboratory curiosity, but one which in time we will see on every side entering into the composition of many useful and ornamental objects, making them cheaper and better than will any other metal or alloy with which we are now acquainted.

As a metal aluminum is never found free in nature, but always in combination with some other element. It is difficult to go anywhere and not find it; the beds of seas, lakes and rivers are made of it in the shape of clay; the hills are made of it in the form of granite, slate, feldspar and mica. Such ornamental stones as the garnet, ruby, sapphire, turquoise and topaz are largely composed of the salts of aluminum. Our buildings are made of the clay and the stones, and we touch it and walk upon it constantly, and yet, through difficulties in converting it to the metallic state from any of its salts, it still remains too expensive to be used for many things which its attributes fit it for.

Late in the eighteenth century attention was first called to a substance called alumina, which was obtained by calcining alum. About that time the opinion was offered that our earths and stones were made of something which had a metallic base, and it was generally concluded that the alumina was the oxide of some metal, which, though it had never been seen, it was decided to call aluminum, or aluminium. Experimentation proceeded for the manufacture of the metal for many years afterward, but it was not until 1824 that the metal in anything like purity was produced. This St. Claire Deville did while seeking to make a higher oxide than was known then. His method was to produce the proto-chloride of

*Read before the Odontographic Society.

aluminum, and from this he hoped to be able to make the protoxide. In his experiments he used metallic potassium, and at the conclusion of his experiments he found many small metallic shot which possessed remarkable properties. Recognizing the importance of his discovery, his experiments in the future were turned in the direction of making aluminum and making it so cheap that it might be of use. It was not long before it was discovered that sodium was a better reagent than potassium and it was used in the place of the latter.

Up to within comparatively few years, sodium has been used exclusively for the production of aluminum, when it was produced for commercial purposes, and the attention of every one was directed toward the production of cheap sodium, as cheap sodium meant cheap aluminum, with what success may be determined by the prices of the metal, the great difference of price between 1856 and 1886 being largely due to the cost of production of the sodium. In 1856 aluminum was sold at the rate of \$90 per lb.; in 1886, \$12 per lb., then a further great reduction to \$2 in 1889, and to-day the price is about 90 cents per lb. for pure aluminum. The change between \$12 per lb. and 90 cents per lb. is not due to the cheaper sodium, but to a method of reducing the metal by electrolysis. It has been estimated that of the entire cost of the metal when reduced by the sodium process, the production of the sodium costs 57 per cent, the production of the double chloride of aluminum and sodium costs 33 per cent, while the production of the aluminum costs but 10 per cent.

It has always been extremely difficult to produce pure aluminum for commercial purposes, the difficulty lying in the fact that it is practically impossible to purify the metal when it is once reduced. Its purity varies between that which Grabeau produced, which was about 99.8 fine, to Devilles', which was about 88.3 per cent aluminum.

The solution of the question is, in starting with a pure native salt of aluminum and preventing its contamination during the process of reduction, as, at a heat greater than is required to melt it, aluminum alloys very greedily with iron, copper or silicon, and a very small percentage of either of these will so change its character as to make it valueless.

In the process of converting aluminum from its chemical combinations with the other elements to a metallic state, it is usual to

use one of four forms, viz.: the hydrate of aluminum or *beauxite*, the oxide of aluminum or *corundum*, the double fluoride of aluminum and sodium or *cryolite* and the sulphate of aluminum. *Beauxite* is a combination of the hydrate of aluminum and the oxide of iron principally, in addition to which there is a much smaller percentage of one or all of the oxides of silicon, sodium, potassium and hydrogen. It is not by any means a pure mineral, and as this is the source from which Deville derived his aluminum, it is not surprising that he did not produce a pure article.

Beauxite is found principally in France, Austria and Ireland; the first discovered beds were found near the town of *Beaux*, France.

The oxide of aluminum or *corundum* is familiar to us all in the laboratory as the *corundum* stone, in jewelry as the *garnet*, the latter being the purer form. *Corundum* is quite a pure mineral and is the principal source of aluminum in the United States being the base used in the *Cowles* and in the *Hall* process; until the last twenty years its principal source was *India*, where it was taken from the beds of rivers; since then it has been discovered in large quantities in the mountains of *Georgia*, *North Carolina* and *Pennsylvania*, where it is mined from its original beds before the elements have pulverized and washed it into the rivers.

Cryolite, or the double fluoride of aluminum and sodium has its almost exclusive source in *Greenland*, small quantities have been found in *Pikes Peak*, *California*; it may be found quite pure, but often is not, and in those processes which use it in the production of aluminum it is artificially prepared; as found in nature it is used by the soap-makers for its sodium and by glass-makers to make a glass which bears a close approximation to porcelain in appearance.

Aluminum sulphate, or native *alum*, is found in quite large deposits in *New Mexico*, and quite pure . . . and this salt it was which was used by *Grabau*, whom it will be remembered was credited with producing the purest aluminum.

There are a great many ways of reducing these salts, of which we have spoken, to metallic aluminum, some of which have been put to practical use, and some of which have gone no farther than laboratory experiments; but, the various practical methods may all be classified under two heads, and these are:

First, reduction by sodium, and

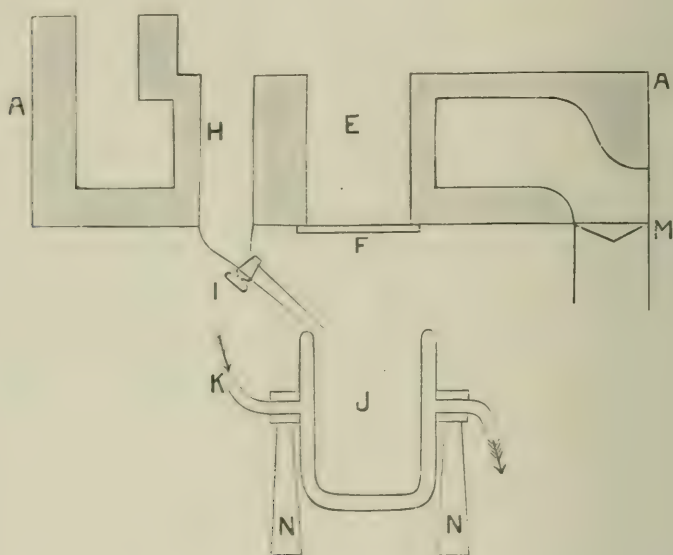
Second, by the electric current ; in the first classification sodium is the agent used in all of the different methods which come under that head and no matter what salt of aluminum is used, the sodium is used to deprive it of its acidulous radical, thus freeing the aluminum ; in the second classification the electric current is used for two purposes, first to generate heat and second by the process of electrolysis to decompose the aluminum salt. This may be done when the salt is rendered fluid by dissolving it in water or by dissolving it in a melted bath of other minerals, or it may be done with the melted salt alone. I will describe two processes of recovering aluminum from its salts, one by sodium and one by electrolysis. The first produced the purest aluminum and the second is producing a very large proportion of the aluminum used in the United States, and they are each typical of the two methods.

One of the difficulties in the production of pure aluminum is the greediness with which, while melted, it alloys itself with other elements. The two principal foreign substances which are found in aluminum which the makers have tried to make pure, are silicon and iron, and these come from the vessels in which it was melted ; another insurmountable difficulty at this writing is the impossibility of purifying the metal after it becomes contaminated ; of course it may be purified, but at such an expense as to make it a commercial impossibility. Now to prevent these troubles, one must have a pure salt to start with and then must exercise all care that the metal does not become alloyed in process of melting. The first of these requisites Grabau succeeds in meeting by using the sulphate of aluminum and reducing it to the fluoride of aluminum. His object in using the sulphate, is that it can be procured cheaply, in large quantities and very pure. How he accomplishes the second will be understood after an explanation of his process and reduction.

As the process of reducing the sulphate of aluminum to the fluoride is rather complicated, it will be sufficient to say it is done by causing it to react with the purest obtainable cryolite (the double fluoride of aluminum and sodium), the bases change places forming the fluoride of aluminum and the sulphate of sodium.

Cryolite is very apt to be impure, but fortunately for the success of his process, in the next step in the operation there is formed a pure cryolite, and in quantity greater than is needed to carry on the first.

Grabau had constructed a furnace of rather peculiar pattern of which I have made a drawing: A A represents a brick furnace with grate at M, enclosed in this so that the flames may pass around them are two iron pots—H and E. H is used to melt the sodium in and has at its lower portion a cock, I; E is used to heat the fluoride of aluminum in and is closed below by a sliding bottom, F, upon the removal of which the contents can be discharged into the pot below. J is an iron pot with double sides and bottom, the



space between the outer and inner sides is constantly filled with running water, entering at K, the pot is swung on trunions and is supported by the pillars N, the action of the sodium upon the fluoride of aluminum would be to free the aluminum as metallic aluminum and become converted itself to the fluoride of sodium. It is desirable, however, to have formed the double fluoride of aluminum and sodium, consequently such proportions of each are taken, that after the sodium is first converted into the fluoride there shall still be present sufficient aluminum fluoride to reconvert the sodium fluoride first formed into the fluoride of sodium and aluminum or cryolite; the pot E, is filled with the fluoride of aluminum and heated to a low red heat, the sodium is then put in

the pot H, where it immediately melts, the cock I, is then turned, causing it to be discharged into the pot J, the slide F, is then drawn, precipitating the contents of E, upon the melted sodium; at the heat used the fluoride of aluminum remains granular and drops upon the sodium below, very much like sawdust on water; reaction commences at once between the two substances and in less than a minute is completed; such rapid chemical change necessarily raised the temperature quite high, melting the cryolite which is formed; a portion of this becomes chilled against the side of the pot and is unaffected by either the melted cryolite or the melted aluminum, thus thoroughly protecting the aluminum from contact with the sides of the iron pot, which would contaminate it while it is melted, thus removing the second difficulty which all makers had encountered in the production of a pure aluminum, no silicon in the form of sand crucible being used. In all processes of reduction with sodium there has always been a great waste of sodium, in the neighborhood of twenty-five per cent, while in the Grabau process as high as ninety per cent of the sodium is utilized. This is due to the fact that the sodium is protected from contact with the air by the fluoride of aluminum.

From its light specific gravity other makers have found difficulty in causing the globules of aluminum to run together as soon as formed and found it necessary to add a flux of some kind; this Grabau does not do, as the melted cryolite is quite thin and acts as a flux.

As soon as reaction ceases in the pot J, it is shaken to facilitate the union of the aluminum and then inverted, its contents emptied into an ingot mould constructed after the manner of the pot J, the object being to keep it quite cool, that the hot aluminum may not contaminate itself with iron.

Mr. Hall, of Pittsburgh, Penn., is the inventor of a process of producing aluminum by the action of the electric current, which has proven very successful in producing an aluminum quite pure (from 95 to 98 per cent) and at such a price as to make it a practical process.

The salt which he uses from which to produce the aluminum is the oxide or alumina which he procures by calcining pure aluminum hydrate; this is dissolved in a bath composed of the fluorides of sodium, calcium and aluminum which he obtains by melting together cryolite (the fluoride of sodium and aluminum), fluorspar, (the fluoride of calcium), and fluoride of aluminum.

The melting pots are cast iron and are lined with carbon, similar to that used for electric light carbons; the bath is melted in these and the aluminum oxide is added and is immediately dissolved as is sugar in water; in the center of the vessel are suspended several carbon cylinders, to them is attached one of the wires which forms the positive electrode, while the carbon lining of the melting vessel serves for the attachment of the negative wire.

The electricity seems to confine its decomposing energy almost entirely to the oxide of aluminum, for there is very little waste of the elements composing the bath; the metal is produced at about the rate of one pound an hour, and is allowed to collect in the bottom of the pot, from which it is ladeled out at stated intervals.

Mr. Hall at first used external heat to render the bath fluid, but now, at the commencement of the melting the electrodes are separated as far as possible, thus increasing the resistance to the current; this furnishes heat enough to melt the bath, and when that is accomplished the electrodes are allowed to come nearer together.

The temperature of the bath is kept about high enough to melt brass, and the process is continued uninterruptedly for two or more weeks. Since putting up their last works they have been able to furnish alluminum for fifty cents a pound.

It will not be necessary to dwell long upon the physical characteristics of aluminum; a few statements will be sufficient; its color we are all familiar with; as to harness, pure aluminum, or aluminum 99 per cent fine is quite soft, a trifle harder than pure tin, easily cut with a knife which will turn up clean shavings that will not break, but a slight addition of alloy, five per cent will change all this; it will be much harder; the knife will have a grating sensation while cutting, the shavings will break and crumble; this test with a knife blade is a good offhand test to determine the purity of any aluminum in question.

Aluminum is quite as malleable as gold and may be beaten into as thin sheets; it may be drawn into very fine wire but with considerable trouble, as the annealing must be performed frequently and is quite difficult from the readiness with which the metal melts. Another peculiarity is the greater amount of power required to either draw it into wire or roll it into sheets than is required to do the same work with other metals. The melting point of aluminum is placed above 700 or somewhat higher than zinc, its specific gravity at 2.5, or it is $2\frac{1}{2}$ times heavier than an equal bulk of water.

As a conductor of heat and electricity it is good but not remarkable. It has one curious property, however, which makes it valuable from the cook's standpoint; when heated it loses its heat very slowly.

Aluminum resists the action of oxygen and sulphur and their compounds perfectly, under which to other metals would be trying circumstances. Nitric, sulphuric and muriatic acids all act slowly upon aluminum. Of the three, muriatic is the most active, but even this is slow when the metal is pure, but quite the contrary when the metal is impure. Of the organic acids acetic in connection with chloride of sodium is the most energetic, but even this has not much effect. It has, however, a decided effect upon tin, and when we consider that the acetate of tin is poisonous, and that the acetate of aluminum, or the subacetate which forms on cooking, is not poisonous, the lesson is plain—make culinary vessels of aluminum and not of tinned iron.

Of all chemical substances, the hydrates of sodium and potassium act the most energetically upon aluminum, dissolving it greedily.

The melting, casting, rolling, drawing and soldering of aluminum is different from all other metals in common use, and must be understood in order to make these operations successful.

It is best melted in the sand crucible. This crucible should have been filled with a mixture of lamp-black and molasses allowed to dry slowly, after which a hole is excavated in the center, or the crucible may be merely smeared on the inside with this paste. It is possible, by using great care, to melt it in the naked sand crucible, but the danger is that with much heat the aluminum will take up silicon from the crucible. As to the manner of heating, it should have a slow fire and patience, as it is very slow to melt. Use no flux, as the metal will not oxidize. In melting the scraps be sure they are free from foreign metals, and if they do not unite well when melted they may be pressed together with a smooth, clean iron bar. It is advised by some that the pieces to be melted be dipped in benzine before melting; others add benzine to it when they are melted.

When melted, aluminum is viscid or thick, and does not run freely. For this reason and from its light specific gravity it is somewhat difficult to cast. To avoid these difficulties, if cast in a

sand mould, the sand should be left as loose as is consistent with making the mold, to permit egress of air, and the gate should be large and long, furnishing sufficient head or weight of metal to force the melted metal beneath into the finest portions of the mold. Dr. C. C. Carroll's method of furnishing artificial pressure by means of air answers admirably.

In hardening and annealing, aluminum is peculiar. It is best softened by heating to low red then suddenly cooling, and by heating to redness and cooling very slowly and gradually it becomes decidedly hard and springy. In rolling, hammering or drawing it very quickly becomes hard and elastic, and requires frequent annealings with sudden coolings. These operations all require a much greater expenditure of force to accomplish the same results than they do in other metals. The power needed to roll cold aluminum has been compared to that required to roll hot steel.

When first brought to general notice one of the greatest drawbacks to its use, was the great difficulty experienced in soldering it, this has to some extent been overcome, but it is still difficult and somewhat unsatisfactory. Two solders are recommended for dental work, the formulas are for the platinum aluminum solder, gold 30, platinum 1, silver 20, aluminum 100; and for the gold aluminum solder, gold 50, silver 10, copper 10, aluminum 20.

Mourey experimented a great deal with aluminum solder and I quote direct from him, directions for soldering, "The separate pieces of metal to be soldered together are first well cleaned then made somewhat rough with a file at the place of juncture, and the appropriate solder put on in pieces about the size of millet grains; the objects are laid on some hot charcoal, and melting of the solder effected by a blast lamp, or a Rochemont turpentine lamp; during the melting of the solder it is rubbed with a little soldering iron of pure aluminum: the soldering iron of pure aluminum is essentially a necessity for the success of the operation since an iron of any other metal will alloy with the metals composing the solder while the melted solder does not stick to the iron made of aluminum.

Fluxes for soldering are recommended by some, some of which are balsam copaiba, benzine, paraffin, stearin and vaselin. As in other respects aluminum is peculiar, so it is in regards polishing. Like silver it takes the best finish by burnishing but the fluids which are so effective in burnishing silver would ruin aluminum; a mix-

ture of equal parts of olive oil and rum is recommended for the burnishing, after which it is buffed.

Some of the alloys of aluminum promise to be of great interest but the useful one seems to fall into one of two sets, these are those combinations in which aluminum forms 15 per cent or less or 85 per cent or more of the compound, those in between these are for the most part useless.

Alloys of silver and aluminum containing about 10 per cent of silver make very useful articles of table ware as they are not at all easily tarnished and present fully as pleasing an appearance as does the silver alloyed with copper. Dr. Carroll's metal for cast aluminum plates, according to the description in his patent papers, consist of copper 1, silver 5 to 9 and aluminum 90 to 94, the addition of the small amount of copper it is claimed does away almost entirely with the shrinkage.

Compounds of copper and aluminum are more generally known than any others and of them all that which contains 90 per cent of copper and 10 per cent of aluminum is the most useful; when the percentage of aluminum increases, the alloy becomes very brittle; this is true up to the point where the aluminum forms 90 per cent of the mass, when the alloy again regains its malleability, but not to as great an extent as in the first named. The different alloys of aluminum and copper are called aluminum bronzes and are designated as 5 per cent or 10 per cent bronzes according to the amount of aluminum present.

The effect of small percentages of aluminum on iron and steel is very marked. One or two per cent of aluminum in cast steel lowers its melting point and makes sound castings, it increases its tensile strength; tools cast from this compound come from the mould very sharp, require less finishing, take a higher polish and are at once ready for hardening and tempering. The melting and casting of wrought iron is very unsatisfactory, first from the excessive high heat required to render the metal fluid, and second, the castings are not at all strong; during the process of melting a point is reached when the metal is in a pasty condition, it is melted, but so thick it is impossible to pour it; to render it fluid enough for this purpose it must be raised to a much higher temperature, if at the pasty stage, a small amount of aluminum is added the iron at once becomes thin and rests quietly in the pot, it may be now made into castings

sound and as sharp as cast iron having all the properties of wrought iron except the fiber, castings of this alloy are called Mitis castings.

The action of small percentages of aluminum in cast iron is most marked in poor white iron which is usually hard and brittle; the desirable changes which it produces are that it makes the harder irons softer, renders them more fluid when melted and makes more solid castings.

As to the uses of aluminum and its alloys, with the exception of aluminum bronzes, they have not as yet in many ways taken the place of the older metals and alloys, and probably will not until some method has been devised by which aluminum can be produced at quite, or nearly the same price as iron. Its main claims upon our attention are its great strength and light specific gravity, together with its resistance to many of the corroding forces which affect other metals. The first article made of aluminum was made in 1856, and was a baby rattle made for France's baby Prince Imperial. It can and has been used for culinary utensils but not to any great extent, because it is most too expensive; on the contrary it is not used on the table to take the place of silverware because it is not expensive enough; its claims for excellence in the kitchen rest upon the resistance which it offers to the action of sulphuretted-hydrogen, oxygen and the organic acids.

In surgery aluminum is of very decided advantage from its innocuousness, light weight, and strength; surgical instruments, suture wire, surgical appliances used in orthopedic surgery may all be made from it with great benefit to both physician and patient.

It has been used perhaps as much as in anything in the manufacture of astronomical, surveying and optical instruments, for which purpose no other metal answers so well.

For scales and weights aluminum and the aluminum silver alloys are extensively used.

Those who are interested in aerial navigation pin their faith to aluminum and are waiting patiently for a process which will make it cheaper.

With its use for dental plates we are all familiar.

The soldiers equipments in other lands are now largely made from aluminum; his canteen, cartridge shells, buckles, sword scabbard and handles are all made from this metal, very decidedly lightening the load he must carry.

PRIORITY IN THE USE OF THE SCREW, IN REGULATING TEETH.

BY EDWARD H. ANGLE, D. D. S., MINNEAPOLIS, MINN.

As the screw does, and most probably always will, occupy such a prominent place in the regulation of teeth, it must always be of much interest to the student of Orthodontia, to know its history, and by whom first used in regulating the teeth. On this subject much inquiry and research has been made.

The late Dr. James W. White, in answer to the question as to who first used the screw in the regulation of teeth, says: on page 404 *Cosmos*, Vol. 20., (1878.)

"The first, so far as we know, to suggest the employment of screws in regulating apparatus, was Chas. Gaine, M. R. C. S. of Bath, England, who claims to have originated the idea in 1849. He published, some twenty-two years ago, a pamphlet entitled, "On certain irregularities of the teeth, with cases illustrated of a novel method of successful treatment."

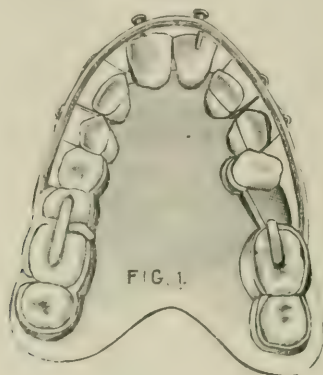
In this little work the following paragraph occurs:—"I now have recourse to the following method—a gold plate extends back to, and embraces firmly, the first molars. To this support a thick, flat piece of gold is attached and carried around the front part of the dental circle, so as to cover all the anterior surface of the incisors leaving only the cutting edges free. This accomplished, I cut away the plate from the posterior surface of the irregular teeth, and opposite to these vacant parts, drill holes in front through the thick gold, into which each screw is inserted for each tooth to be operated upon. The action of the pressure on the faulty teeth, is direct, painless, and most easily controllable, and for its efficiency I can freely vouch. A fortnight suffices to bring the teeth into a true form."

Dr. Farrar, in his late work, claims to have made special efforts to gain information which would settle the point of priority, and after devoting six pages on the subject, says:

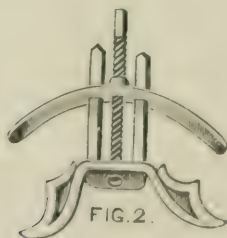
The credit should be awarded to Dr. Gaine, Bath, Eng., and to Dr. W. H. Dwinnelle, N. Y. City. Dr. Gaine having been the first to use the screw simple in 1849. Dr. Dwinnelle for making use of it in the same year in the form of a jack-screw."

But from recent researches, I find the screw was used long before this date both in France and Germany. For my library contains a book written by J. M. A. Schange, and published in Paris

in 1842 entitled "*Precis sur Le Redressement Des Dents, ou Expose des moyens rationnels de prevenir et de corriger Les Deviations des Dents suivi de quelques reflexions sur les obturateurs du palais.*" In which several regulating appliances are described and illustrated, clearly showing the use of the screw in the regulation of teeth. Three of which appliances are here reproduced.



The author says:—"Very often as the central incisors stand out obliquely, the lateral incisors stand inward. It results that all attempts to make the centrals come into line would be vain, without moving the laterals at the same time. I have often used an appliance to serve the double purpose; this appliance resembles a band



which Fauchard made use of and since used by the greater number of dentists to detract teeth that are inlocked. But I have anchored it to the sides of the molars and have appropriated it to two uses.

It is composed, as we see in Fig. 1, of two hooks that are intended to embrace the molars. On the external face of each of

these hooks is soldered a gold band which follows the contour of the external face of the teeth, to the limit of the part that corresponds with the central incisors. This band is pierced by two holes

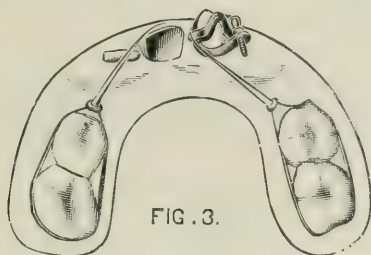


FIG. 3.

which receive two little vis (screws) and opposite the lateral incisors are also holes indented to give passage to the ligatures of silk which are tightened around these teeth. As we tighten the screws they press on the central incisors, but as these teeth move in with difficulty, the band springs out increasing the tension on the lateral incisors, and the cuspids also, should they be attached. This appliance has been drawn in such a way as to make its action clearly understood, but applied on the person the band is a great deal more approached to the laterals, and screws of pressure are so small that they do not interfere in any way with the complete movement of the mouth. I have recently applied it on the mouth of a young person belonging in the family of M. Rignoux, *imprimeur de la Faculte de Medicine*, who had been recommended to me by M. le docteur Pinel-Grandchamp.

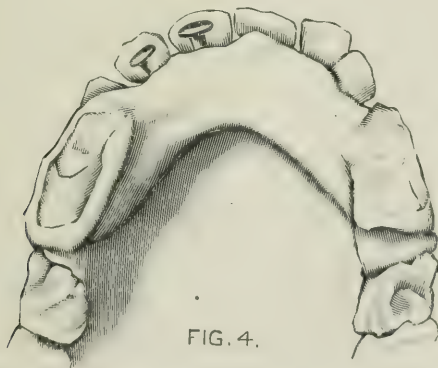


FIG. 4.

Several very distinguished dentists to whom this lady had been sent, did not wish to attempt the cure of this vice it being so pronounced that they judged it to be impossible. I undertook what my confrères supposed impossible, and applied the appliance as above described.

Perceiving that there would not be sufficient space to bring all the teeth into line I extracted the first petit molars, after which I drew back the canines with ligatures attached to other holes in

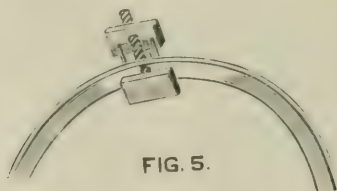


FIG. 5.

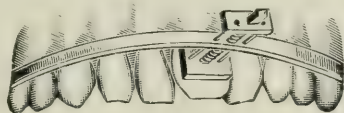
the band, causing space sufficient to admit the central and lateral incisors which were drawn completely into line at the end of the second month.

I owe to M. Sampson, manufacturer of surgical instruments, the small ingenious machine shown in Fig. (2) to draw in the two centrals, at the same time drawing out the two canines and laterals. This seductive little machine consists of a tree of a screw secured in a plate of gold, threaded in its center and operated by a watch-key. This appliance when pressing the plate in front of the teeth, draws at the same time another plate in a similar way, at the posterior, bearing on the lateral incisors and canines.

In Fig. (3), also from the same work, the clamp band is plainly indicated, and it is worthy of note that it is of the identical pattern as that claimed by Dr. Farrar and illustrated nearly 200 times in Vol. I of his new works, and described by him on page 235 as follows :

"The above instrument made by me, which will hereafter for brevity be spoken of as the clamp band, consists of a thin ribbon of platinum or 18 K gold about one-sixteenth to one-eighth of an inch in width, having a nut soldered to each end, one smooth bore, the other threaded, both of which are connected by a screw having a square nib or globular head with a hole through it—this depending upon the fancy of the manufacturer, or the requirements of the case. The screws are turned by a watch-key or a lever."

Again, in the excellent library of Dr. W. P. Dickinson of this city, I find a copy of Robinson "On the Teeth," published in London in 1846, in which the screw is shown in regulating, and described by the author as follows: (See cut Fig. 4.)



"I determined to have an instrument made that would be free from the objections to which those hitherto used by Fox, Bell and others are liable. It consisted of a piece of hippopotamus (dentine) carefully fitted to a model of the anterior part of the palate and internal surface of the upper teeth, the edges being rounded off so as to make it comfortable as possible for the tongue. It extended in the form of a bar behind the four incisors, beyond which it was flattened so as to form at each extremity a sort of cap, which on the left side was carried over the crown of the bicuspid and first molars and on the right after passing over the bicuspid, accommodated itself to the space left by the removal of the first molar tooth, which had been extracted at a former period. This arrangement fully answered the purpose of preventing the under-jaw from closing in its former position, and the power of exerting the pressure required to force the irregular teeth into their proper positions was given by two pieces of strong gold wire screwed into the bone immediately behind the teeth. These wires were turned and flattened so as to present a button-like surface to the posterior aspect of the same teeth. The instrument was firmly retained in its place by means of two broad clasps inserted into the bone and and fastened around the second bicuspid.

And in the supplement to the German edition of the above work, the screw is again clearly shown in the very original but somewhat clumsy manner, as seen in Fig. 5.

And, again in the second edition of Delabarre, we find the screw forming a part of the regulating device. In which one end of a lever is bent at right angles, and is screwed into a cap which is slipped over the tooth to be rotated, the other end of the lever being tied to an anchor tooth, as shown in Fig. 6.

Thus it will be seen that the screw employed by this author was

for the attachment of an appliance, and not the direct power in moving the tooth—as shown in the appliance above.

The date of using this appliance is not given by the author, other than the date of publication, 1819. Neither is the date given by J. M. A. Schange, in which he employed the screw, but as his book was published in 1843 it is reasonable to suppose that one or two years must have elapsed between using and publishing—or 1840 or 1841.

Possibly further research may show still earlier dates, but until then the honor must be given to C. F. Delabarre for first making use of the screw in a regulating appliance. And to J. F. A. Schange for first employing the screw directly in the movement of a tooth.

PROCEEDINGS OF SOCIETIES.

CHICAGO DENTAL SOCIETY.

Annual meeting April 5, 1892.

PRESIDENT'S ADDRESS.

By D. M. CATTELL, D. D. S.

Gentlemen of the Chicago Dental Society:

My address to you this evening will be brief. But few things of *marked* importance have happened to this society since I was chosen to preside over you at our last annual meeting.

We began the year with a membership of ninety. We have had *three* members resign, and *two* have left us by death's door; fifteen have applied and become members. So at present the membership's roll shows a body of good and true men numbering 100.

We have had *nine* papers read, and the subjects they pertain to discussed, *eight* of which were presented by members of the society, and *one* by Dr. Holmes, of Joliet, a guest of the Society for the evening.

The year has not been prolific of any great scientific elaborations among us. But certainly the average of the papers, and also the discussions, have been above that of previous years. Let me repeat—the year gone by has shown an increase of good essays—both in number and quality, a few being presented by our younger members.

Why is it our young members are not heard from more, either with papers or in discussions?

The business of the society has been done in an orderly manner and with dispatch, and I certainly thank you for that as well as for the courtesy shown your presiding officer.

The *important* action of the year by this Society, was the turning over or presenting to the Newberry Library Association our own library—one that had staid by the Society through thick and thin, prosperity and reverse, pleasure and pain, health and disease, happiness and sorrow, through its *life* so far. But the action was that of the Society—after due deliberation.

The Library—*our library*—was given away. There were but few of us at the time, that raised our voices against the resolution. We were outnumbered, the resolution became a fact. So to-day we are without a library. The Newberry Association has a Dental Library of value to itself as an historical fact—as a library of reference for us it is, practically, a nonentity. Pardon me, gentlemen, for so particularly alluding to this bit of history, but my remarks at the time the said resolution was under discussion were rather derided by some who thought they saw great benefits in the near future for such disposal of said library. Indeed, I felt rather *sat down upon* for presuming to disparage the gift. But now, gentlemen, my day has come and I have had my say. Let it be recorded as one of the *few* mistakes that this society of ours has made during its existence of over twenty-five years. In other ways it has made for itself a record, a name. Do not some of you remember a resolution presented to this society by Dr. A. W. Harlan a few years ago, when we met in the lecture-room of the Chicago College of Dental Surgery, at No. 6 Washington street, looking toward a *World's Dental Congress*? Said resolution was adopted and ordered placed in the records of the society. Indeed, gentlemen, if I mistake not, the first note ever sounded on that great issue was blown by this same society, and if the records were searched I feel sure they would bear me out in the thought that to this society belongs the honor of the suggestion for which such great preparations are being made and from which such great things are expected. It was months after that resolution was presented before other societies caught up the refrain and commenced to “resolve.”

Another important fact has occurred. This Society, as leader,

has, with other local societies, given a *Union banquet* in honor of the World's Columbian Dental Congress' Executive Committee.

The banquet was a success, due to the individual interest taken in the great meeting to be held in 1893.

As this banquet was given the evening of the 12th of January, near the time for our own usual annual dinner, it seemed unnecessary that we should give another so soon following.

The great success of the "*Union*" banquet was in the *fact* that five local societies could and *did* work in *harmony*—showing that in the necessities of the near future, much may be expected and much can be done in harmony and with profit.

If I am rightly informed there is already a project in embryo to soon form a *Union Society* for the purpose of listening to and taking part in a high grade course of lectures pertaining to and benefiting us in our calling. Possibly a "University Extension" course.

Let us hope the germ will develop and become a full grown fact.

How better can we entertain ourselves in post graduate study?

Now, gentlemen, I have presided over you the past year in a mild sort of way and you have been courteous enough to allow matters to slide along easily—which fact, I assure you, is appreciated. We have before us the coming year much work to be done—many meetings, may be, to be presided over of a special nature. Let us select for the coming year, a president that will do us credit—a *goodly presiding officer*. Remembering, that the World's Columbian Dental Congress will have been born e'er long in our midst—we must recognize our offspring—although greater than its parent—we must bend every effort to make its short life a success and its death a glory.

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YOUNG MEN IN SOCIETY.

At a recent meeting of the Chicago Dental Society, the question was raised as to why we do not see young men taking a more active part in society work. It was stated that the younger members of this society are seldom heard in the discussion, and that the society by reason of this had drifted to a point where it should properly be called an old man's society. This was considered a cause for regret, as the success of any organization depends much upon the influx of new blood.

We are scarcely in accord with the views of the retiring President who gave as his idea that the fact of having a short-hand reporter always present at the meetings to report discussions deterred young men from venturing on the floor.

We have always felt that since the DENTAL REVIEW began to publish verbatim reports of the discussions of this society that the work was of a better order than formerly. It should prove a stimulus to any man, old or young, to know that his remarks are to receive the benefit of publication, and no man however inexperienced in speaking, or however halting in his sentence, need fear the reporter in this instance, on account of an invariable rule which provides that the reporter's manuscript shall be submitted to the speaker for revision before publication. We do not know of many young men who dislike to see their names in print, and we certainly think that the reason why our young men keep in the background at the meetings must be sought for on other grounds.

One thing must be borne in mind when we consider society work in Chicago, and this probably influences some of our young men in their attitude to the Chicago Dental Society. In this city the young men have a society of their own—a society organized by them and expressly for them. The idea was to make it a sort of training school for young men where they could meet and discuss matters among themselves without running the gauntlet of criticism from older and more experienced men. At this society they are all on a level and they consequently feel little diffidence in advancing their views on any subject.

And let us say right here that we think the principal reason why we do not hear oftener from them in the older societies is on account of a natural lack of confidence which makes them hesitate to pit their judgment and opinions against those of men who have been longer in practice. Our views of the matter is therefore complimentary to the young men, for a certain degree of diffidence in a young man is commendable. At the same time we must warn them that this kind of diffidence may be fostered too long, and that in trying to be too modest they may sometimes avoid being useful.

We would urge the young men then to come forward and assume their proper share of society work, and we also bespeak for them from among the older members a considerate hearing.

Very often a young man whose maiden effort receives criticism is deterred from future attempts. Young men are essentially sensitive of criticism, and do not realize in their earlier experience of society work that when an older member takes issue with them it is for the purpose of bringing out the truth rather than to belittle the speaker.

We have a word of encouragement for the young men. We invite them cordially to take part in our discussions. We assure them that this is important for they are the men who one day will form the working force of our societies. They cannot have too much preparation.

C. N. J.

COTTON AS A ROOT FILLING.

One of the strangest phenomena of this progressive era is the persistence of some men in continuing to fill root canals with cotton. If any one still adheres to the belief that anything with which cotton may be saturated is going to "hang on, bull-dog

fashion," for an indefinite length of time, that belief will be soon dispelled if he will only stand by and enjoy the odor, when one of these antiquated fillings is unearthed. If any, contrary to the teachings of the day, still persist in using cotton, let them use the most oily and if possible dirty cotton, on the principle that the more of this it contains the less of anything else it can take up. The poorer the cotton, the better its absorbent quality, hence the more dangerous is it as a root filling. A tooth, the root of which is filled with cotton, is never thereafter in a physiological condition; the inflammation surrounding it causes the patient to shield the tooth in question, and in so doing the entire side of the mouth, resulting in injury to other teeth; the soreness is often supposed to be due to a "cold," or it is sometimes thought to be a condition always present in bad teeth. Probably in no branch of dentistry is the adage that whatever is worth doing at all is worth doing well so true as in the treatment of diseased conditions in or about the roots of teeth and their subsequent proper filling. We have found cotton in teeth, where the cavities were filled with gold quite recently. It is a disgrace to the profession that these occurrences are still so frequent.

CONSISTENCY, THOU ART ETC., ETC.

The dental profession is at the present time endeavoring in various ways to elevate its standard, to demand recognition as a dependent or independent profession worthy to command the highest respect of the people. In doing this it demands of members of the profession, that they shall live and act as professional gentlemen, and observe the principles that govern professional men. No other profession—not even excepting the medical—has so high a regard for what is known, as the "Ethics of the Profession." In its college work, literature, societies and among its individual members (taking into full consideration all short comings), the dental profession of to-day is the most ethical yet liberal and tolerant. Under these circumstances it is painful, very painful, to see a prominent dental society, show so small a regard for the profession, as to accept and give prominent place on its programme, to the claims and work of one, who stands expelled from the Society of his own State, and who saved himself a similar disgrace by resigning—on request to do so—from the American Dental Association.

If we desire to maintain our present position, and improve thereon, it is not well to trifle with these things. What is consistent in one State should not be inconsistent in another.

WORLD'S COLUMBIAN DENTAL CONGRESS.

A general interest is being taken by dentists everywhere in the dental congress to be held in Chicago in 1893. It is hoped that all dental societies in the world will take early notice of the date for the opening of the congress, August 17th, 1893. Visitors from Europe who sail from Bremen or Hamburg, in Germany, on Saturday, the 5th of August, will have ample time to reach Chicago. Those sailing from Great Britain and Ireland can sail the same day, reaching New York on Sunday or Monday; and our Belgian, Dutch and French confrères may leave on the same date from Antwerp or Havre or Boulogne, reaching New York on Monday or Tuesday at latest, and Chicago Wednesday night.

It is hoped that the various dental societies in Europe will fix the date of their meetings either earlier than August 1st or later than September 5th, to enable as large a number of their members to visit Chicago as can possibly be spared the perils of an ocean voyage. Visitors from other countries will necessarily leave home from one to two weeks earlier in order to receive the first impression of the opening of the World's Columbian Dental Congress. We hope our friends will begin to arrange their itineraries at once in order not to miss this notable event.

CAUTION.

In using the oil of sassafras in teeth where the pulp has been dead for some time be careful to seal the cavity pretty well or the patient will suffer from nausea if allowed to swallow more than a drop or two of the oil.

CHICAGO DENTAL SOCIETY.

At the May meeting of the Chicago Dental Society there were 62 members and 29 visitors present. There was nothing special on the programme to bring out such a large number, but the officers had issued a circular of general interest (which will be found elsewhere in this issue) that caused such a large outpouring. One lady was admitted as a regular member and Mr. J. H. Mummery

M. R. C. S., L. D. S., Eng., was elected to Honorary membership.

There are now two honorary members Dr. G. V. Black and Mr. Mummery. For a society more than a quarter of a century old, this is a good showing. The views of this Journal on the question of conferring honorary membership in Societies and honorary degrees from colleges are to the effect that the recipients should have by their previous labors advanced the cause of education or science in such a noticeable manner as to have fixed the eyes of the world upon them and then the Society or College has good grounds for conferring the special mark of their good will and esteem; merited honors are always gracefully worn by true scientists, teachers and authors and we felicitate the above named gentlemen on their accession to membership in the Chicago Dental Society.

A new era of good feeling and interest is abroad and it argues well for the coming congress that not only the Chicago Dental Society but the Chicago Dental Club, and the other societies, are having meetings filled with enthusiasm and large attendance. Let the work go on until every dentist of respectable lineage is a member of some dental society.

DOMESTIC CORRESPONDENCE.

POST-GRADUATE STUDY.

BY WM. C. C. BALL, JACKSONVILLE, FLA.

To the Editor of the Dental Review:

SIR—I have seen some good articles in the REVIEW about the Post-Graduate Course. The course as given by the Chicago College of Dental Surgery is a thorough one. If all the colleges would take it up and have the class actually perform its work there is no doubt that nongraduates could be almost as good practitioners as are the graduates. There is a question I desire to ask those not in favor of granting a Post-Graduate diploma. Where there are two dentists in a small town, and one of them has been in practice about ten years, the other just out of college, which of them would they like to have extract a tooth for them or administer nitrous oxide gas to them? I should wish the man with experience. If the colleges desire to unify the profession let them give a diploma to a dentist who has been in practice five, eight or ten years. If

he is willing to leave his practice and attend college for one, two or three months, taking a Post-Graduate course, let them bring a certificate with them from a notary that they have been in practice the stated number of years; compel them also to pass a preliminary examination. If the examination was vested in the Deans of the colleges, such men as Brophy, Abbott or Taft, in twenty or thirty minutes' conversation they could readily determine whether the candidate is suitably educated to enter the course. In the class of 1891 were graduates and three nongraduates; by their work one could not distinguish one from the other, hence I claim that one man was just as good as another, and I believe the entire class would corroborate my statement.

LETTER FROM NEW YORK.

To the Editor of the Dental Review:

Dear Sir—April, as formerly, has been a fickle month, and is fully in keeping with my observations among men and things. Things are not running smooth, the trickling brooks have lost their happy gurgling sound, so joyful in the first spring days, and have put on a turgid, muddy appearance. Men are not what they seem. *No man* who has done a mean thing can disguise his countenance. The quicker he goes and cleans up, just so much sooner, his countenance will put on a manly glow. Crying "Rats" doesn't fix it, but that is what the politician says, so the paper tells us.

Dr. Barrett has put it, as it is and will be. In the April number of the *Advertiser* he says that the late disturbance in the First District Society, has produced a more bitter crop of dissensions and recriminations, than any meeting within the period of our remembrance, and has left behind it a train of evil influences, of which none of us will see the end. That is the way we have viewed it, and it is a most unfortunate occurrence at this particular period of our history. Who did it? will be the interrogation of hundreds of men. Bad news travels fast, and we do not have any anxiety, but that the whole affair will be properly located. "What we sow, that shall we reap."

The slate of the annual meeting of the first district society was carried out as predicted, aside from giving the names of officers that would be elected. Dr. Carr was elected President, Dr. Hart Vice-President; Dr. Gibson Treasurer; and Dr. Nash Secretary for the past seven years, was reelected. He is of a kind that gives

satisfaction to all. Always a nice little gentleman and assiduously attends to his official duties. The only report that was of any marked interest was the report of the Executive Committee, and this was worthy of special notice for it was a perfect refutation of untruthful charges brought against the Committee. Hearsay is a dangerous thing to meddle with unless you are quite sure what you hear is right. We quietly think that one of the virtues of our letters is that they tell what is true.

A motion was made at the annual meeting by Dr. Morgan Howe looking to the discontinuance of clinics, which have been so many years an extremely popular feature of the First District Society. It was advocated that such a step decided upon would be "a black eye" for the Society, considering that it had already got one, it did seem rather wise not to disable both, certainly until time had elapsed for the recovery of the first. A compromise was finally accepted, by voting a vacation until October next. It may be a little premature to say that this is only a step for the removal of the Society's clinics to a more convenient place, and while we have the thought in hand we will add the proceedings of the Society also; you know, or some do, that there is a Society's Journal to be looked after, and it is perfectly natural that this self interest should have attention. But in spite of all this there will be those that have an ambition to see their articles published in the Journal that has the biggest circulation. This fact has already come to light in the Odontological Society and been discussed. At the hour for the monthly clinic we found that it was off officially by the absenteeism of the chairman of the Clinic Committee and the resignation of another member. Yet by force of habit quite 50 dentists convened, and an interesting clinic was held although entirely informal. A case of much interest was presented by Dr. Peters, of Jersey City, for counsel. We pronounced it retarded development of a superior lateral, caused by deformed supernumerary. The enlargement appeared like a bony cyst. There proved by probing to be quite a copious discharge. We tented it freely and advised a renewal from day to day, for the purpose of developing a large and free opening for ready inspection. In this way the case would be made instructive to the dentist having it in charge, and if he needed further counsel or assistance he could present it at a future period.

A case needing regulation was presented of what may be

termed overhung teeth, and what to do is the question so often asked. The lower centrals biting against the mucous membrane and quite a space behind the centrals. The dealings with such cases are just now having attention by Dr. Kingsley in the *Cosmos*, and we suggested to the practitioner presenting the case, to study these articles.

An extreme case of abrasion so-called and erosion, involving the grinding and cutting surfaces of all the teeth; advised crowns, capping and also Dr. Knapp's idea of placing over the entire surfaces a rubber plate, which he claims will check the difficulty. We recommend attention to the conditions of the gum margins, à la Riggs. This is our method of dealing with such cases surgically and then apply such mechanical dealing as the case indicates. A case of Porcelain bridgework in the mouth of Dr. Atherton, of Battle Creek, Mich. Two superior bicuspids put in the day previous by Dr. Parmly Brown. This work speaks for itself, and judging from the interest Western dentists are manifesting, they seem disposed to know for themselves. When the doctor gets home to Michigan his patients are going to have an object lesson based on his own tuition. I see Dr. Brown is invited to the Illinois meeting. He won't let any grass grow under his feet, and while he is there all one has to do is to keep eyes open and he can catch on, if he has the grit.

A case of bridge work called the Bar method was shown at this monthly clinic, put in by a Dr. Calder, of Salt Lake City, in 1874. One of the teeth that the bar was attached to had loosened and come out. Dr. Brown took it out in the presence of a New York dentist. Bridge work has been about a good many years. It has come to stay in the hands of men of good judgment. A dentist told us at the late mass meeting in New York that he wrote to a New York dentist nine years ago to know about the merits of this work? The reply was that no one of any reputation would have anything to do with it. Some changes since. But this practitioner living in a distant part of the State, thought there must be something in it, and took another tack for information, which resulted in his becoming an expert, and he put money in his purse, and he told us further that he had paid over \$1,600 for royalty. He joined the D. P. A. at the late mass meeting and will sin no more. Ye that read this, go and do likewise.

No little comment has been made regarding the results claimed

at the late mass meeting. Four hundred new members were claimed, we have been told by a dentist who said, by actual count by himself, there were but 364 in the hall. It might be that members were made by proxy.

A dentist very prominent, remarked when it was announced that 400 new members had been added, "Oh! that's only a showman's statement."

Odontological Society meeting found but a small number to listen to a very painstaking paper on "Copper amalgam" by Dr. Osman, of Newark, N. J. No one has presented so excellent a review of the subject. The matter of research was commendable in a degree far above the ordinary. Dr. Osman's effort was intellectual. Taking a subject so much tabooed at the present time, to be able to say so much in its behalf up to date and predict what may come of it ultimately, and based on so much sound reasoning, was a success that copper amalgam much needs, for it has gotten a back step of late that must send it to the rear unless such efforts afford it a better standing, as Dr. Osman seemed to have the purpose to do by his paper. The summing up of this directed the thought to the belief that he had established for himself that it did possess merit and he had come to this conclusion by a persevering experimentation and close observation. He did not evince any purpose to drop the article without exhaustive investigation. We are glad to emphasize Dr. Osman's spirit to be a useful investigator, rather than an easy going one. There was so much desultory talk we cannot don it with a title of discussion, a number owned up that they have dabbled with it and have gotten all kinds of unfavorable results and yet they could give no lucid reasoning for them. Dr. John B. Rich, of Washington, formerly of New York City, took occasion to say that he did not feel proud of his confrères for acknowledging that they were willing to make use of an article that had played so many tricks upon them. It seemed to him as criminal. The idea that we American dentists should be following so much the lead of English dentists, when we have taught them all they did know (don't yer know). Dr. Boedecker said he received a good idea from Dr. Herbst, of Germany, relative to copper amalgam. It was combining in the mixing with mercury a sheet of pure silver, about a quarter of a grain to about eight grains of the C. A. This did prevent the turning black and also the waste. Dr. Bogue had found that by several reheatings after

pressing out all the mercury, facilitated the harding quality, and this prevented the waste, also so much complained of. Dr. Bogue did not use this material except in buccal cavities. He used other amalgams in proximal cavities, but no amalgams in grinding surfaces. Somewhere we have met with a similar remark and we gathered from it at the time, the impression that he uses gold always on grinding surfaces because of its better appearance. If this is true, I think the C. A. on buccal surfaces would mar the æsthetic effect.

We gather the impression that Dr. Bogue had emphasized the use of C. A. in New York during the past few years. Dr. S. G. Perry seemed to think so also. Dr. Davenport, an associate of Dr. Bogue's intimated that Dr. Bogue did not now think so favorably of the material. An effort had been made by the O. S. to get a full expression of the views of its members, on the subject of C. A., judging from the voluminous roll that appeared at the meeting, said to be testimony. Some of us will get the headache by the time we get through reading it. It was voted to publish this testimony in the proceedings without boring the Society with the burden of it. We sighed a relief.

Copper amalgam is evidently going to get an ardent attention if the voice that was raised against it at the meeting was an indication, and if there is no more intelligent opposition arraigned against it than appeared at the meeting by the discussion, save Dr. Bogue's remarks and the essayists, the readers of the *Journal* will be but little wiser regarding the demerits of this material.

It was announced by the Executive Committee, that Dr. Stebbins, of Shelburn Falls, Mass., would read a paper at the next meeting upon the use of nitrate of silver in arresting caries and also its use in connection with pyorrhœa alveolaris, and will show some cases that have been treated by this agent. I have noticed his paper published in the *International Journal*, in one of my late letters.

A banquet was given by the Odontological Society to the honor of the Barrett Osteological collection, there being some seventy-five present, including several dentists from other cities.

An enthusiastic effort is being made in New York for the completion of the tomb to be erected in memory of Gen. Grant, and to have it completed by '93. The dentists, together with other professions and the trades, have formed their committee for the collection of funds in aid of this memorial. A singular coincidence

occurred at the forming of the committee. The meeting was called to order by Dr. Parr, who was formerly an officer in the Confederate Navy. He said he contributed to the erection of a monument to Gen. Lee, and he was ready and willing to do the same for Gen. Grant.

How often extremes meet. A good many dentists have purchased the Small obtunder for obtunding sensitive dentine. It is now, as exhibited at the clinic, very much minimized in its proportions since its first presentation by Dr. Niles, of Boston. This subject of treating sensitive dentine is taking up a good deal of attention from different points of compass. This small apparatus is nothing more or less than an alcohol blow pipe, which many of the older practitioners are perfectly familiar with. This instrument differs from others that are devised to do the same service. Associated with various medicaments these have a valve direct in the cavity for letting on the current of vapor when it is heated to its proper temperature. It is in this sense a disadvantage, we think, not to have such a valve on account of the difficulty of readily approaching the carious portion of the teeth. The vapor is at high heat, and thrown upon the mucous membrane it would not be very comfortable.

It came to us that at a late demonstration before a class of students the patient was *cooked* too much and rebelled. It was said that it was carelessness. The question will arise, what does this degree of heat do to the dentine? It is claimed that it so acts on the fibril that it contracts, and leaves a space between the fibril and the decayed portion, cutting off the mechanical action which produces sensation. This is the claim made in Boston, What do western dentists think of it? It looks a little as though Boston and Harvard were rushing this small instrument. Prof. Fillebrown is out with large endorsement of it, and the agent has a good sized package of other endorsements. One thing was brought out at the late meeting of the O. S. that will strike bright men as strange, in these days, certainly, after so much reiteration of intelligent dealings with cases such as was referred to. It was stated as a decided prejudice to copper amalgam that it produced pulpitis. Three cases in which it occurred, the party went on to state and that "*in such cases you know* that we always take out the filling as quick as we can." Do the readers of the REVIEW accept such practice? What is a practitioner taking out a proper filling

for when pulpitis occurs? This, I admit, would not be common practice, yet we hear it still from not a few quarters. It is strange how many poor listeners there are after so much teaching. "Having ears but do not hear." I suspect that some worthy one may be saying, I wish that this correspondent had told how to take care of a case of pulpitis and not take out the filling. Well, just as we would if it had no filling, and that does not answer the query. We will be definite. Open directly to the pulp chamber at such point as the case indicates. But some one says, the tooth is so very tender and painful; support the tooth by tension with a ligature or by the thumb and finger. Gentle dealing and a full understanding of what is needed. When the pulp is reached and it bleeds, as it is quite sure to do, the pain will ultimately subside; yet to alleviate the pain sooner apply a pad of Japanese paper saturated with tincture of aconite, and the case comes under control. It may require renewal. Many cases can be so restored to usefulness, but I think a majority destroy the pulp after controlling the pain. After we secure relief from pain, if we think of trying to save the pulp, we dress the pulp with tincture of aconite, combined with oil of cloves, and stop the opening gently and loosely. To protect the tooth against mechanical disturbance we apply a gutta-percha cap to an adjoining tooth which lifts the teeth apart. This we allow the patient to wear until the case is free from tenderness. This gutta-percha cap is preëminently valuable in cases of pericementitis. We have used it in hundreds of cases during the last thirty years, and are indebted to Dr. Wm. B. Hurd, of Williamsburgh, Brooklyn, Eastern District, for the suggestion. We always like to give credit for such helps; we do not think it is done any too often.

Quite a little breeze is getting under way.

In my last letter I mentioned that there was a query going around in reference to the statement made by Dr. Crouse regarding a "something" that would ultimately wipe out the present Lowe claims, etc., etc. The Doctor did not make himself clear to all. It was queried whether the books that Dr. Parr had placed in his possession had anything to do with this statement. If it had anything to do with it it was said they were of no value anyway etc., etc, and many other remarks that I will not now give. Dr. Parr does not feel that he has been dealt fairly with. He had known more or less of the rumors concerning him and he claimed that it

was due him that he make a statement explaining his true position. He expected he would be allowed to do this at the late mass meeting, but was ruled out. We will by inference intimate a glimmer of what is in his mind and more may come later. He would like to know *why* letters that were in the hands of a prominent dentist in New York (a correspondent of his), were placed in the hands of Mr. Atwood, the Crown Co.'s agent, and confronted him in court, when he was fighting a case against the Crown Co. (and he paying his own expenses), why this was given into the hands of the enemy by a *supposed* friend of the profession. Dr. Parr called and asked this person if he had the letters sent to him. He said yes, and went to his desk to produce them and found them gone. (He did not tell him that they had confronted him in court.) This person says in a surprised manner. "Who do you suppose could have stolen those letters?" "Well," he said, "Mr. Atwood, the agent, was here in my office one night and we had a little lark together, and I don't understand it." Dr. Parr says he has not been able to get an explanation so far.

It is a query why a friend of dentists was blocking another friend of dentists, in a litigation that was to be helpful to dentists in trying to settle a perplexed question in which all dentists are mutually interested; to put aid in a known enemy's hands is something that ought to be explained, in the interests of ethics, and Dr. Parr says that if it is not explained, he will consider it only justice to himself that he explain it. Yes, justice, though the heavens fall.

A misprint was made in the use of Dr. Parr's name in connection with a new invention of crown and bridgework. The true inventor has "come off" and we cannot track it. Doubtless there will be a new invention within a month and we will not miss it. It makes a quick step to keep up with dental ingenuity which is being generated continually by mother necessity.

The last sentence of my April letter gave notice that Dr. Boedecker was to again enter the arena of dental discussion. This is after an absence of several years. We do not propose to turn on the light and show up how this absence came about, although we could make some spicy reading if we should tell what we do know of the initial discord, and who it was that engineered it, and the First District Society lost the intelligent services of one of our ablest microscopical investigators. Dr. Boedecker has shown

himself the peer of his instructor, Prof. Heitzman, to an extent that no other pupil has. We are pleased to give the readers of the May number of the REVIEW the first of his latest, and it will be fresh, for it will hardly be cool from its utterance at the State meeting the second of May, at Albany. This paper will be received with as much credulousness as any paper that has ever come before a dental body. Why? Because it is *arsenic* on dental pulps, and they *don't* die. But some one will say, Hold your nose. No, gentlemen, only hold your know and listen attentively, and you may be instructed. The doctor does not put this paper before the minds or seekers after the truth, as a finality. It opens the question of the *raison d'être* he finds things that do appear under the power of the defining lens. Dr. Herbst, his German friend—whom all men of intelligence admired for his sincere and honest intelligence during his visit to this country—has been placing cobalt, or arsenic and cocaine on pulps, and covering them for two days and then removing the coronal portion of the pulp by a revolving bur, leaving the stumps or portions in the canals, and over these he burnishes a capping of No. 4 tin, which hermetically seals them. He emphasizes the burnishing the tin coverings, for this process forces the tin into all the anatomical interstices. This method he has dealt with for over eight years, with a degree of success that surprises all to whom the facts are known. The readers of the REVIEW recall that I presented this subject some months ago, as it was brought out before the Brooklyn Society by Dr. Schultze, an associate with Dr. Herbst, for two years.

Dr. Boedecker throws down the gauntlet, for this friend's theory and practice, and applies to it an intelligent investigation, and this is what he is to present at the Albany meeting. He will illustrate the paper, showing what the microscope has defined. Together with that marvelous discriminator, his tutor, Prof. Heitzman, they unite so that the results are exceedingly interesting. It not only confirms the professor's reticulum theory, but it also shows that some of the branches of the pulp in the canals, are actually living and in others secondary formations of osseous structure were formed even to the apices, which asks the question, What could be put there that would make a safer root filling? Do we know all yet? What will those (wise) men say who ask, What does the study of the microscope have to do with dentistry? We suggest—wait until the evidences are all in. We know of

some men that have left societies, because they have tired of so much science. What would such men do with this question : What produces the secondary formation, shown by the microscope, in the pulp canals? It is hinted that possibly the sulphide of tin may have a chemical effect. We add that possibly it is the mechanical effect of a foreign substance, producing irritation, which stimulates a physiological action. The action of the tin is shown by the drawing, quite a distance into the dentinal fibril, by changing the color. But the good work will go on while we have so many willing workers. While you are reading these remarks of ours, you will find the old views turning somersaults in your mental gymnasium. We say, go slow ; oceans of things are going to happen, even after we are off for the unknown fields, of still greater marvels. Let us keep our grip on all that betokens helpfulness to each other, for we all, sooner or later, come to friendly need of our elder brother, and happy will he be that has kept lock step with the highest and best things.

Three men especially in New York City, had unusual cause for real fraternal assistance, from first to last for true brotherly helpfulness, and they were Profs. Heitzman, Boedecker and Abbott, but none of them were in attendance on the last obsequies of our grand and dear Dr. Atkinson, which fact has been much commented upon. So far as Boedecker and Heitzman are concerned, I am able to solve the mystery. Dr. Boedecker tells me (and duly I have the fullest confidence in him) that he felt so tenderly, that he could not trust his feelings to go to the funeral. He sought the company of Heitzman, but they could neither of them meet the sorrow. Noble compliment, I say, to a noble self-sacrificing brother. This will be a gracious explanation.

Judging from the able list of essayists for the State meeting at Albany, we predict an interesting session. The list of discussors are noted as distinguished, a term to which much latitude is given in these days, making it mean much, or little. Too much the same is the conferring honorary memberships. This is the sign of the age and mean men go to Congress.

Ex.

NEW YORK, MAY, 1892.

REVIEWS AND ABSTRACTS.

SALIVARY AND SANGUINARY CALCULUS. By W. H. P. Jones, D. D.
S. Nashville, Tenn. Read before the Dental Section of Nashville Academy of Medicine.

Sanguinary. I take it, means "of or from the blood." The blood is a nutritious fluid circulating through the tissues of all organized beings. This liquid, which is essential to life, in the plant is known as "sap;" in the animals, as "blood."

The elaborated juice constituting the former is probably simply nutritive. Blood, or "liquid flesh," as it has been called, is a nutriment and something more. It is the means by which used-up materials are gathered up and probably *passed to other fluids* to be removed from the system.

The characteristics of living organisms are ceaseless change and ceaseless waste. The blood becoming impaired or weakened it cannot dispose of waste materials properly and may therefore play an important part in these calcareous deposits. But I cannot see that it is more *conspicuous* in this than in the biliary, urinary or salivary calculus, allowing for the variations in characteristics according to the organ in which the deposit is found. For it is a reasonable conclusion to suppose that the blood—as general scavenger of the system—gathers up the material and passes it on to the various organs by means of the fluid passing through and peculiar to that particular organ. And therefore I beg leave in this manner to dispose of the sanguinary and pass on to the consideration of salivary calculus.

Calculus means, literally, "a small limestone." Calculi are concretions which may form in every part of the animal body, but are most frequently found in the organs that act as reservoirs and in the excretory canals. They are met with in the tonsils, joints, biliary ducts, salivary, spermatic and urinary passages, and upon the teeth.

The causes which give rise to them are obscure or not well understood. Those that occur in reservoirs or ducts are supposed to be owing to the deposition of the substance which composes them from the fluid as it passes along the duct; and those which occur in the *substance* of an organ are regarded as the product of some chronic irritation. Their general effect is to irritate, as extraneous.

bodies, the parts with which they are in contact and to produce retention of the fluid whereof they have been formed.

The symptoms differ according to the sensibility of the organ and the importance of the particular secretion whose discharge they impede. Their *solution* is generally believed to be impracticable. *Spontaneous* expulsion or removal by *mechanical* means is the only way of getting rid of them.

We will confine ourselves to the consideration of the kind found in the oral cavity, salivary calculus.

Salivary calculus, or tartar of the teeth, is composed of earthy salts and animal matter. According to one authority it is composed of phosphate of lime, fibrin and animal fat. Another says that it is composed of phosphate of lime, magnesia, ptyalin and animal matter.

* * * *

The *relative* proportions of its constituents vary according as it is hard or soft, or the temperament of the individual is favorable or unfavorable to health, and therefore no two chemists give the same result.

We find the black, hard, dry tartar, which affects the teeth of those persons of good constitutions, not in very large quantities. It is hardly soluble in muriatic acid, while the dry, yellow tartar, found upon the teeth of bilious persons, dissolves more readily in it. The soft, white tartar, found on the teeth of persons of a mucous temperament, is scarcely at all soluble in the acids, but is readily dissolved in alkalies.

The black tartar is the hardest, the white the softest, and the density varies as it approaches the one or the other of these colors.

There is one kind of black tartar found upon the teeth of those whose *innate* constitutions *were* good, but by disease or through intemperance and debauchery have impaired their physical powers. It is deposited in *large* quantities on the teeth opposite the mouths of the salivary ducts. It is hard and so firmly attached to the teeth that it is with the greatest difficulty it can be removed from them. It is very black, with rough uneven surface, and is covered with a glairy, viscid, and almost insufferably offensive mucus. This kind of salivary calculus is very hurtful, not only to the gums, alveolar process, and teeth, but to the general health also. The gums inflame, swell, suppurate, and recede from the necks of the teeth. The alveoli waste, the teeth loosen and frequently drop

out. The secretions of the mouth are vitiated by it, and are unfit to be taken into the stomach, and so long as it *remains* on the teeth no treatment can fully restore the system to a healthy condition.

There is another kind of black tartar, but this variety rarely accumulates in large quantities, and is much less harmful to the teeth and gums. It is very hard, adheres very firmly to the teeth, and indicates a good constitution.

The dark-brown tartar is not so hard as either of those just described. It collects in large quantities on the lower front teeth, and sometimes on the first and second superior molars, and is frequently found on all the teeth, though not in such great abundance. It does not adhere so strongly to the teeth as either of the black varieties, and can therefore be more easily removed. The odor from this variety is less offensive than the first, but more fetid than the second. Those subject to this kind of tartar are of mixed temperaments; the sanguineous, however, usually predominating. Their physical organizations, though not of the strongest, may, nevertheless, be considered very good. They are more susceptible to morbid impressions than those of the more perfect constitution.

The yellow or yellowish brown variety is softer in consistence than the dark, and is generally found upon the teeth of persons of a bilious temperament. It is sometimes found on every tooth in the mouth. It contains less of the earthy salts than any of the foregoing descriptions, and owing to the vitiated mucus adhering to it, has an exceedingly offensive odor. It is so soft that it can very easily be removed.

White tartar is not often found in large quantities, generally upon the *outer* surfaces of the first and second superior molars, and the *inner* surface of the lower incisors, and frequently on all the teeth. It is almost devoid of calcareous ingredients. Fibrin, animal fat, and mucus constitute more than one-half its substance. It is quite soft, exerts but little mechanical irritation on the gums, but its acrid qualities keep up a constant morbid action in them. It vitiates the fluids of the mouth, corrodes the enamel, and causes rapid decay of the teeth. This kind of tartar affects persons of mucous habits, or those who have suffered with some disease of the mucous membranes.

Green tartar, or green stain, though commonly classed as *tartar*, is not properly a calcareous concretion. It affects the teeth of children and young persons; not often the adult. It is usually confined

to the labial surface of the upper incisors and cuspidati, and bicuspidi. It is exceedingly acrid, and corrodes the enamel and irritates the gums. This discoloration—it is hardly more—indicates an irritable condition of the mucous membrane, and viscosity of the fluids of the mouth.

The general effects of the deposition of tartar upon the teeth are irritation, inflammation, turgescence and suppuration of the gums, inflammation of the alveolar dental periosteum, the destruction of the sockets, and loss of the teeth. Tumors, spongy excrescences of the gums, hæmorrhages, an altered condition of the fluids of the mouth, are among the local affects arising from a long-continued presence of large collections of tartar upon the teeth. The constitutional effects are hardly less pernicious, and are not well understood. Indigestion, and general derangement of the assimilative functions are among the most common.

I desire to call your attention to a calcareous deposit found on the teeth of some persons, remote from the gum margin, attached to the root at a point seemingly inaccessible to the saliva. It possesses the same characteristics as the dark brown tartar. It is found in varying quantities, and may attack *any* tooth, but rarely have I found it on more than two or three teeth in the same mouth and at the same time. It is an irritant to the extent of producing abscess and loss of tooth.

Whence comes this deposit? Hardly from the saliva, as it seems to be beyond its reach. Can it be from the gum, itself apparently healthy? It is only of late years that I have observed this deposit. And on making inquiry I have learned that such persons were of a decided rheumatic or gouty tendency. We know that pericementitis is often directly traceable to a rheumatic condition of the system. May not this fact lead to the belief that a want of proper distribution of the acids exert a greater influence over diseases of the mouth than is generally thought? And may we not look to the adoption of systemic along with local treatment for better results in diseases of the mouth? This affection is not to be mistaken for Riggs's disease. I hope for a full discussion on this subject, for I think that there is more in it than would appear on the surface. Another point in this connection. It is the peculiar and destructive effects of tartar upon the teeth of *some mouths*, teeth that have been filled, notably on the neck of a tooth, along the gingival border. You find the gum turgid and spongy, discharging constantly a poi-

sonous fluid—serum, perhaps—fearfully destructive to enamel and dentine alike.

How shall we alter these conditions and bring about a healthy action in the parts, and stop the destruction going on around the fillings under this *moist, gummy, disgusting* deposit? And this brings us to the treatment of tartar.

The thorough removal of *every particle* of tartar is the first step, and of the first importance. One, two, three, *five* sittings, if necessary, until you do get it, every particle. For this purpose, variously constructed chisels, hoes, hatchets, scalers, scrapers, turned at every conceivable angle—in fact, anything of any shape in the way of an instrument best adapted to getting it off is what you want. Operators will differ in their selection of instruments for this purpose. So it is almost useless to recommend any particular set or make of instruments.

Having removed the tartar, ordinarily you will need very little medicaments beyond a simple astringent and stimulative tonic, such as nutgalls and cinchona, soda, sage, and honey, tincture of white oak bark and honey, alum and cinchona, among the old, with a world of new solutions and mouth washes. In some cases you may find the inflammatory action so great as to call for general constitutional treatment in addition to the local, in which you will be governed by the indications, and select your remedies to suit the peculiarities of each particular case. Manifestly it would make this paper too long to attempt a detailed description of the treatment of the varied cases. In my opinion there is a great deal in this subject. I mean in the causes that lead to this deposit. And I regret my inability to present this paper to you in better shape.—*Dental Headlight*.

TWO CASES OF REMOVAL OF THE GASSERIAN GANGLION THROUGH THE FLOOR OF THE SKULL FOR TRIFACIAL NEURALGIA. By Edmund Andrews, M. D., Surgeon to Mercy Hospital, Chicago. Read before the Chicago Medical Society, February 1, 1892.

Eight months ago I read before this Society, a report of cadaver studies on the possibility of removing the Gasserian ganglion through the floor of the skull, and demonstrated six different methods of operating. I also showed the probability that in the worst cases of trifacial neuralgia the true seat of the disease would thus be taken away. While making these studies, Prof. Rose of Lon-

don had, unknown to me, been considering the same problem, and found opportunity to test it on two patients. Since then I have done the operation twice on living patients, and I have a recent letter from Prof. Rose, informing me that he has lately done it twice in addition to his former cases.

Case 1. This patient was a woman about sixty years of age. Her neuralgia came on five years ago, beginning mildly, and gradually increasing in severity. The inferior maxillary nerve was the one affected, and the least touch on the cheek, and every effort at swallowing, caused horrible paroxysms of pain. Owing to the distress caused by swallowing she had long ago given up taking solid food, and grown so weak that for the last five months she had been confined to bed.

I etherized the patient and proceeded as follows, making the external incisions after the plan of Rose, but operating on the deeper parts by a method of my own.

A horizontal incision was made along the zygomatic arch, and crossed by two vertical incisions, one at each end. The arch was sawed off at each extremity and turned down upon the cheek, carrying with it the masseter muscle which arises from it. This uncovered the temporal muscle and its insertion into the coronoid process of the lower jaw. I then sawed off the coronoid process and turned it upward, carrying with it the temporal muscle. Beneath lay some loose fat, containing the superior maxillary artery and the dental and gustatory branches of the affected nerve.

Tying the artery, I found the two branches of the nerve, cut them off and seized the stumps with strong forceps, and used them as a guide to the foramen ovale, through which their common trunk emerges from the cranium. I then cleared away the tissues from the level area of the cranial floor which lies just external to the foramen ovale, and applied a trephine with a long shaft to the area mentioned, setting its edge about two millimeters from the foramen. The button of bone being removed the dura mater was brought to view. The septum between the edge of the trephine hole and the foramen was then removed with bone forceps. The nerve was drawn outward and the inner half of the wall of the foramen nipped away. Taking the nerve as a guide I then opened the capsule of the ganglion and scooped it out with a small sharp surgical spoon. The temporal flap was then laid down and the coronoid process fastened to the jaw with silver wire. Next the masseter

flap was brought upward and the zygomatic arch wired to its place in a similar manner, and finally the incisions in the skin were closed by silk sutures, a small point being reserved for drainage.

The wound healed mainly by first intention. The neuralgia ceased at once. The entire area of the distribution of the nerves derived from the ganglion was deprived of sensibility. A peculiarity was that the third and fourth nerves, which control the recti muscles, were paralyzed, so that the patient could not move the globe nor lift the upper lid, showing that these nerves were injured by the instruments while enucleating the ganglion, owing to their close proximity to it. However, the nerves were not destroyed, for at the end of four weeks the patient had completely recovered the lost motions, but not the sensibility of the organ.

The pain of swallowing having been abolished, the patient began to eat heartily, recovered strength and resumed personal care of her household. Three months have now elapsed with no return of the pain, and it is to be hoped the cure will be permanent.

Case 2. This patient was a woman, sixty-five years of age, and in much the same condition as the other. A year previously I had trephined the ramus of the jaw and resected the dental nerve on the proximal side of the ramus of the jaw. The pain stopped for three months and then relapsed. I therefore decided to remove the ganglion and operated by the same method as in Case No. 1. The dental branch of the nerve having been removed at my previous operation, I was deprived of the use of its trunk as a guide to the foramen ovale. However, I found easily the free edge of the external pterygoid plate, and tracing it upward to its junction with the floor of the cranium, I found the foramen, and passed a probe into it. The rest of the operation was the same as in Case No. 1. The pain was at once relieved and there was no paralysis of the muscles of the eye.

Four weeks have elapsed, and there is thus far no return of the pain.

There has not been time since my operations, or those of Prof. Rose, to settle the question of permanency. However, I think it in the highest degree probable that in almost all cases the progressive neuritis causing the pain ceases when it reaches the ganglion, and rarely extends onward to the brain, just as it usually does in the ganglia of the intercostal nerves in herpes zoster; and if this be ultimately found to be true, then this operation will permanently cure the great majority of cases.—*Chicago Medical Recorder.*

PAMPHLETS RECEIVED.

TENTH ANNUAL REPORT OF THE ILLINOIS STATE BOARD OF DENTAL EXAMINERS. December 15, 1891, Springfield, 1892.

We regret that the publication of a register of the dentists of the State has been abandoned. While under the present State law it is impossible to publish a correct list the annual publication of the Register often proved of service.

VALEDICTORY ADDRESS delivered by J. J. R. Patrick, D. D. S. at the annual commencement of the dental department State University of Iowa, Thursday evening March 10, 1892.

TENTH ANNUAL REPORT OF THE ILLINOIS STATE BOARD OF DENTAL EXAMINERS. C. S. Smith Secretary 1891. We extract the following from the last report:

SCHEDULE OF MINIMUM REQUIREMENTS.

1. CONDITIONS FOR MATRICULATION.

1. Certificate of good moral character.
2. Evidence of a good English education, to be shown by a diploma from a recognized literary or scientific institution, high or normal school, or first grade teacher's certificate, or, in the absence of these, an examination in the branches of a good English education.

II. FULL COURSES OF DIDACTIC LECTURES AND INSTRUCTION.

These must each be of not less than five months' duration and be held in separate years, with practical instruction intervening between the courses. The following subjects must be embraced in the curriculum, viz: Anatomy, histology, surgery, physiology, pathology and hygiene, materia medica, chemistry, therapeutics, operative or clinical dentistry, prosthetic dentistry and deformities, and metallurgy. There must also be proper clinical instruction in the operating rooms and practical work in the chemical and prosthetic laboratories and dissecting rooms.

III. ATTENDANCE ON EXAMINATIONS, QUIZZES AND CLINICS.

Attendance upon the entire courses as named above will be re-

quired, deductions of not exceeding 20 per cent to be allowed for sickness and unavoidable absence. Quizzes must be held at least once each week in each branch.

IV. CONDITIONS OF GRADUATION; TIME OF PROFESSIONAL STUDIES.

Candidates for graduation must have attended two full regular courses of lectures as above stated, and must pass satisfactory examinations in the above named branches. They must also furnish credible evidence of having spent not less than three calendar years in the study of dental surgery, or medicine, surgery and dental surgery, in which last case not less than two full calendar years must have been spent in the study of dental surgery proper, and all these studies must have been under the direction of a competent preceptor.

After June, 1892, this Board will recognize as reputable only such colleges as require, as a condition of graduation, attendance upon three full courses of lectures, with conditions as prescribed above.

V. FACILITIES AND EQUIPMENT.

The college must have suitable and proper facilities and equipment as regards lectures, chemical laboratory, dissecting rooms, operating rooms and prosthetic laboratory, all the practical instruction to be under the constant direction of qualified superintendents or demonstrators.

VI. ADVANCED STANDING; REQUIREMENTS AND CONDITIONS.

Applicants for advanced standing must be required to furnish a certificate from the dean or other officer of some college recognized as reputable, showing that such student has matriculated and attended the lectures and clinics of one or more courses as required in Rule III. and if such certificate does not show that the student has passed all the branches embraced in the course or courses attended, he must be submitted to and must pass an examination in the same, before being admitted to the advanced standing.

But this rule shall not be so construed as to prevent an examination in all such branches before admission, at the option of the faculty.

VII. APPLICATIONS FOR RECOGNITION.

The Secretary is not authorized to issue the license of the Board

upon diplomas of colleges not previously recognized. Any such colleges in order to obtain recognition must, either through their officers or graduates, make application to the Board, accompanying it with authenticated copies of the announcements, schedules of lectures, quiz and examination questions, or so much of them as the Board may require to form an intelligent judgment; and there should also be furnished a statement of the equipment and facilities of the institution, and its legal status in other States, particularly its home State, if not located in Illinois.

VIII. RIGHTS RESERVED.

In recognizing dental colleges the Board reserves the right to withdraw such recognition at any time, upon proof that any college has not fully complied with this schedule of requirements; and the Secretary is instructed to suspend such recognition, pending an investigation, when any charges or facts shall come under his cognizance affecting the standing of such college.

IX. ADDITIONAL REQUIREMENTS.

In addition to the minimum requirements of the Board, colleges will be held to a strict compliance with all of their own published requirements, and to the observance of all rules which they profess to observe; and any material deviation therefrom, coming to the knowledge of the Board or its Secretary, will be held to be sufficient grounds for suspension of recognition as above stated.

COMPLAINTS.

Every person practicing dentistry in this State whose name is not upon the books of the Board, is practicing dentistry contrary to law, and will be liable to prosecution. Upon complaint being made to the Secretary; a warning notice will be sent such delinquent, provided the full and correct name and address of the party be given. No attention will be paid to anonymous complaints, but all communications are treated as confidential.

In the absence of a revenue for the support of the law and the prosecution of offenders, the Board cannot be expected to undertake prosecutions throughout the State, and the furnishing of witnesses and other evidence, must be left to the party commencing the action. The prosecuting attorney of the county should have

his attention called to any case where the warning of the Secretary has been disregarded.

BOARD MEETINGS.

The regular meetings of the Board will be held on the Monday before the second Tuesday in May, and on the second Tuesday in November in each year. The May meeting will be held at such time and place as the Illinois State Dental Society may meet, of which due notice will be found in the dental journals. The November meetings will be held at the State House, in Springfield. The next meeting will be held at Springfield, May 9, 1892.

C. STODDARD SMITH, *Secretary*,
103 State St., Chicago.

DENTAL COLLEGE COMMENCEMENTS.

WESTERN DENTAL COLLEGE.

The commencement exercises of the Western Dental College were held March 10, 1892, at Music Hall, Ninth and Broadway, Kansas City, Mo. Faculty address by Prof. H. O. Hanawatt. Number of matriculates, 79.

The following named (39) persons received the degree of Doctor of Dental Surgery:

H. H. Sullivan, Mo.
E. C. Laylor, Mo.
E. C. Brownlee, Mo.
O. C. West, Mo.
F. W. Drom, Neb.
L. P. Austin, N. Y.
Frank S. Webster, Kan.
T. I. Hatfield, Kan.
C. Robertson, Jr., Kan.
O. J. Kenper, Mo.
C. C. Jones, Kan.
R. E. Darby, Mo.
L. G. Jones, Kan.
P. J. O'Reily, Cala.
C. B. Leavil, Mo.
D. J. Hayden, Kan.
Fred. M. Franklin, Mo.
W. W. Simpson, Kan.
W. H. Condit, Kan.
H. Yant, Kan.

Mrs. Alice Yant, Kan.
A. L. Smith, Mo.
S. E. Johnston, Kan.
F. W. Johnson, Mo.
Otto Jacobs, Mo.
K. P. Ashley, Kan.
M. D. Van Horn, Ill.
J. F. Spence, Mo.
A. C. Barr, Ill.
F. E. Gaines, Mo.
T. H. Cunningham, Mo.
J. H. Swan, Mo.
Wm. Harrison, Mo.
S. T. Peter, Neb.
A. S. Wright, Mo.
W. C. Allin, Mo.
I. Bascon Nordyke, Mo.
T. E. Jackson, Mo.
T. J. Henkens, Kan.

NORTHWESTERN UNIVERSITY DENTAL DEPARTMENT.

The second annual commencement exercises of the Northwestern University, Dental Department, were held in Central Music Hall, Chicago, on Tuesday, April 6, 1892. The faculty address was delivered by Prof. J. H. Hollister, A. M.,

M. D. and the degrees were conferred by Henry Wade Rogers, L.L.D. President of the University. The number of matriculates in the Dental School for the session just ended was 56 and the number of graduates 18.

GRADUATES.

Charles Martin Baldwin,
James Lewis Blish,
William Leonard Barnes,
Joseph Free Baird,
Edwin Morgan Chapman,
Lewis Samuel Celley,
Adam William Feltmann,
John Lloyd Foster,
William Alfred Grove,

Alvah Bradmon Graham,
William Fielding Garnett,
George Byron Hiller,
William Edward Merritt,
Augustus Gorman Miller,
Samuel Thomas Mitchell,
Clifford Murry Roberts,
George Everett Warren,
Doctor Merritt Wilcox.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.—SESSION
OF 1891-92.

Number of students in attendance 64—22 Seniors and 42 Juniors. The title of L. D. S. (Licentiate of Dental Surgery) was conferred upon the following :

S. A. Aykroyd, Kingston, Ont.
R. Agnew, Clinton, Ont.
S. Anderson, Mitchell, Ont.
E. A. Billings, Leamington, Ont.
J. A. Black, Kingston, Ont.
W. A. Burns, St. Thomas, Ont.
J. A. Edwards, D. D. S. Uxbridge, Ont.
J. H. Fell, Burlington, Ont.
Hermon Hart, Lindsay, Ont.
H. F. Kinsman, Exeter, Ont.

F. A. Lackner, D. D. S. Berlin, Ont.
H. G. Lake, Toronto, Ont.
M. A. Morrison, Petersboro, Ont.
G. J. Musgrove, Wingham, Ont.
F. D. Price, Napanee, Ont.
F. B. Ross, Hamilton, Ont.
D. C. Smith, Uxbridge, Ont.
T. C. Trigger, St. Thomas, Ont.
G. A. Walters, Forest, Ont.
W. R. Wilkinson, D. D. S. Elmira, Ont.

S. C. Wilson, D. D. S. Hanover, Ill.

PRACTICAL NOTES.

THE MANAGEMENT OF PULPLESS TEETH.

SYMPOSIUM FIVE—BY A. B. C. E. AND F. (D LEFT OUT).

A.—The *Western Dental Journal* for January has revived a paper written by Dr. J. E. Cravens, of Indianapolis, on the management of pulpless teeth, which was presented to the International Medical Congress at Washington. At that time the paper was fiercely assailed by several gentlemen, who objected to the purely mechanical method of the management of pulpless teeth. The author of the paper claims in a prefatory note to the editor that the paper never had a fair hearing, in consequence of incorrect reporting ; therefore he claims that he has been subjected to much erroneous and unfair criticism, hence he requests space for the republication of the article.

The management of pulpless teeth is a very broad subject to be spoken of in a single essay or an article to be read before a dental society, because there are so many phases in managing pulpless teeth that they cannot all be carefully considered, therefore we will take that portion of Dr. Craven's paper relating to the purely mechanical method, which is, after the thorough mechanical removal of the pulp and the adjacent infected dentine, his claim is, there being no peridental inflammation, that the root should be filled immediately; that there is no necessity for medicating the root canals because they are not diseased. I take issue with him in this, and say that the dentine cannot remain in contact with septic matters, or mephitic gases any length of time without being saturated, and it is not certain but that the poisons produced by microorganisms infiltrating the dentine of a tooth ultimately affect the cementum, so that the purely mechanical method is a method that must be classed among the lost arts. It is not up to date.

E.—It seems to me, that the advocacy of mere mechanical cleansing is untenable. In the first place, as has been said, if the pulp has been dead for any length of time there is more or less infiltration into the substance of the dentine and sometimes undoubtedly of the cementum itself. The whole mass is infiltrated more or less.

A.—Is it not a fact that all teeth containing dead pulps, where there has been decomposition, the dentine of such teeth must necessarily be permeated by the gases of decomposition?

E.—Certainly.

A.—To say nothing of any accidental matters, such as bacteria or micrococci getting in there from an opening through the crown.

E.—That is necessarily so and unavoidable. Moreover, as to mechanically cleansing by a removal of the infected portion adjacent to the cavity, which Dr. Cravens advocates, that can only be done in the main pulp chamber and to a short distance in the root canals, because it would be impossible to use a bur and cleanse out any considerable part of the infected dentine at the apex of the roots. That portion could not be mechanically cleansed.

A.—In other words, the diameter of the interior of many roots of teeth is such that they cannot be reamed out.

E.—That is just what I mean exactly, it is an absolutely impracticable thing. We must depend upon medical disinfection.

F.—I very well remember this article of Dr. Craven's and was present at the time he read it at the International Medical Congress, and I was astounded at the position he took.

A.—The author says: "In cleaning out pulp canals simple manipulation will accomplish all, and medicines will be of no assistance. The fluid contents of pulp canals may be easily removed by absorption."

C.—I suppose he means by absorbing it with cotton or something like that.

A.—I hardly know what he means. "The gaseous contents of a pulp canal may readily be removed by displacement." Of course, the gaseous contents of a pulp canal escape the very instant you open the pulp chamber. What about stored gases and septic ptomaines that have infiltrated and permeated the dentine of the root or crown? Can you displace them? Not unless you destroy them by the use of chemical substances.

F.—In the discussion of the paper before the International Medical Congress, one gentleman spoke of it as a "medieval romance," which seems to be a very proper title. We would be retrograding rather than advancing if we should adopt the suggestions offered in that paper. They are the methods that our fathers pursued years and years ago when dentistry was in its infancy, when we knew nothing about medication or the advantages to be derived from the use of drugs in the treatment of diseased conditions about the mouth and teeth. We have seen too much practical benefit from the use of H_2O_2 , followed by some of the essential oils to ever lead us to abandon this practice and go back to that advocated by Dr. Cravens.

A.—Did you ever open into a pulpless tooth and treat it mechanically and fill the root at the same sitting without the introduction of drugs?

F.—Never.

A.—Would you consider it safe practice to do it?

F.—Very unsafe.

A.—Do you know of anybody that does it?

F.—Yes.

A.—But you have to extract the tooth?

F.—Yes, almost invariably.

A.—I have tried to be cosmopolitan in practice; I have tried nearly everybody's method, including the one of boring into the tooth

and filling the root without the introduction of drugs. That kind of practice has been a failure in my hands. I have tried the method of immediate root filling and used drugs, and that has been a failure unless the end of the root of the tooth had been encysted, and if the end of the root has been encysted it does not make any difference whether you use any drugs or not, because it is perfectly safe to fill the root. The way you discover that the end of the root of a tooth is encysted is when you put the rubber dam over the tooth and bore into it, there is absence of moisture and absence of odor, the tooth having no history of previous tenderness. It is not discolored, it seems to be of the same color as the adjacent teeth. That is the only physical part of the encystment that you can find. I have dried teeth when there was absence of odor and moisture but discoloration, and every time you will find the roots are not encysted, you have got to have a normal color, dryness, absence of odor, because absence of odor is not proof alone of encystment of the root.

F.—Can you rely upon the signs you have given as pathognomonic of an encysted root?

A.—I have never seen one yet that did not present these conditions.

E.—Does not that rule apply to single-rooted teeth? Because in teeth with two or more roots it would be very seldom that you would have an encystment of all the roots at the same time.

A.—That is true, but I have never seen many multiple-rooted teeth where I felt sure that the roots were encysted; but you must remember that we have many single-rooted teeth in the mouth, and the probabilities are that the pulps die in single-rooted teeth oftener after pulp capping than elsewhere, because the tendency on the part of practitioners, as a rule, is to save the pulps of anterior teeth on account of the color, and frequently they do not take chances to save them in the posterior teeth, and there is a greater number relatively. A great many pulps of teeth die under cappings, no matter of what kind they may be, and probably just that kind of inflammation that takes place following or concomitant with the death of the pulp is sufficient in many cases to produce the encystment of the apex of the root, and that is what saves the color.

B.—You draw the line at immediate root filling, do you?

A.—Yes, even though the pulp chamber were dry and there is absence of odor.

E.—How about double-rooted bicuspid?

A.—If the color is normal and there is no odor and no moisture, then I would risk it. There are few such cases.

E.—I would like to bring out this point in connection with mechanical interference with roots, that my experience has demonstrated that it is absolutely unsafe—in fact, almost certain to produce trouble to attempt mechanical cleansing of a root without previous thorough medical disinfection.

A.—That is correct.

E.—If I should accidentally,—as I do occasionally but not often, pass a broach into the root of a tooth I carry perhaps something with it.

A.—You carry a pus microbe with it.

E.—In cases in which the pulp has been dead, decomposition takes place, and I am afraid that the slightest pressure, as manifested by the patient, will cause trouble.

B.—It does not require much pressure to carry septic matter through the apical foramen.

A.—It does not need to go through the apical foramen, if it is infectious it finds its way beyond the apex.

F.—It finds its way beyond the apex afterward.

E.—It is a safe and necessary rule in opening into such teeth always to refrain from attempting to cleanse the root canals until thorough medical disinfection has been given from three days to a week, or perhaps longer.

B.—In speaking about immediate root filling, you do not refer to cases where the pulp has been destroyed by the operator?

A.—No.

F.—Would you feel justified in immediate root filling after “knocking out” the pulp?

A.—Well, yes. I think that if the pulp of a tooth is forcibly removed and you can absolutely arrest the hæmorrhage, there is no objection to filling the root at once.

F.—Would you not feel safer to wait?

A.—I would feel safer in my own mind, but at the same time I do not see any theoretical objection to filling the root at once.

F.—Supposing anything had gained entrance from the time you entered the pulp chamber, would you feel safe then? Would you feel sure that there was not a serous exudation from the apex down to the crown?

A.—I have a fear that something of that kind will occur. Theoretically there is no serous exudate ; practically there always is.

F.—The practical part is the one we want to have in mind.

A.—If you coagulate a serous exudate you are bound to have abscess sooner or later, because there is no coagulated material that will stand for ages even though it is hermetically sealed.

C.—Would it not be removed if it is pushed through the apical foramen by the filling ?

A.—The coagulation is inside the apex of the root, not beyond it.

C.—But in filling you naturally get that through.

F.—There might be coagulation in the dentinal tubuli themselves. We are not sure but that there might be matter in there which would coagulate by the application of escharotics.

A.—If the tooth were like a gas pipe the force used in filling the root might push the matter beyond the apex, but the force used in such cases is not such as would push it through.

E.—In any event, even in the case cited of removal of the pulp by forcible removal, or the "knocking out" method, we are liable to have a blood clot at the ends of the broken vessels. You are almost sure to have that.

A.—Still, that would be removed by nature's method, that is, if it were beyond the apex of the root.

E.—The trouble is the canal is so uneven and the exact location of the apex not definitely known, it is absolutely impossible to draw hair lines in such treatment. You do not know whether you are just to, slightly beyond, or just short of the apex. Inasmuch as it is a safer practice to wait and disinfect in all cases, why is immediate root filling ever advisable ?

F.—I see no advantage in it.

B.—Except where the patient is going away, that would influence the operator to resort to it, otherwise he would not do it.

F.—That you would call an emergency.

A.—We will exclude emergencies. Is there any necessity for immediate root filling where the pulp has long been dead ?

F.—Are there any possible advantages ?

C.—It saves an expense of time if it can be done just as well.

B.—The chances are too great to be taken.

C.—It seems strange to me that the writer of that paper, who is

so prominent a man and so well read, would be the author of anything of that kind without having some foundation for it. It has occurred to me sometimes that we know life will resist the encroachment of septic matter or diseased conditions to a certain limit, and it remains active until it is overcome by the diseased condition. Would not that possibly be the condition around the root of a tooth? For instance, the pericementum, leaving the root in a healthy condition, probably extends its vital energy to some extent into the tooth; if the root is cleansed mechanically as Dr. Cravens states, and there has not been too extensive an infiltration into the dentine and too much decomposition, and that root is sealed up, is it not possible that the life in the pericementum may overcome the encroachment of that septic matter, and that septic matter must become inert on account of exclusion of air and moisture?

E.—It seems to me that the fault of the theory is, that the pericementum has nothing to do practically with the dentinal tubuli.

C.—The pericementum is very vascular and active. There is quite a circulation in the pericementum.

E.—The fault of Dr. Cravens' theory consists partly in this, that the absolute mechanical cleansing which he speaks of is in many cases an impossibility. It cannot be done. There is nothing left to do but to cleanse it medically.

B.—There is another objection to the theory, and that is the clinical experience of the majority of the better operators and that the method does not ordinarily result in success.

E.—It is a dangerous method to put into the hands of young men.

C.—How do you account for his success at all? That is the point I am trying to get at. A man of his reputation must be successful or he would not claim it.

F. Perhaps the patients drift into the hands of other practitioners after he has filled the roots.

C.—Is it not possible for the pericementum to overcome the encroachment of septic matter?

A.—It has the power to resist, but septic matters in dentine gradually enfeeble it and the object in filling pulpless teeth is not to have them enfeebled, but to have them vigorous so that they can be used. The object is to retain them in a state of health for

the longest possible time and not let the chance slip away by carelessness or inefficient management of them. You fill a pulpless tooth for a person 25 years of age, if at 40 the patient has lost the tooth, do you call that a success?

C.—No, I do not think I would.

A.—You would call it successful if the patient retained the tooth till he was sixty?

C.—Yes.

B.—Success is measured also by the comfort the man has with the tooth. Very often teeth remain in the mouth when they are not comfortable to the patient, and still he submits.

C.—He does not know how much more comfortable he would be were it out.

E.—As regards the success which Dr. Cravens may have had, we can say this of all methods of procedure that have been used in the past, no matter how imperfect and unscientific they have been, that they have, in the minds of those who practiced them, some degree of success. The question is, is it a scientific method according to the present light which we possess?

B.—And is it a method which will stand the test of time?

A.—Is there not a probability of a greater number of teeth being saved by the antiseptic method over the purely mechanical method?

F.—There is no question or doubt about it.

—EXIT REPORTER.

MEMORANDA.

Dr. W. H. Taggart has removed to Chicago.

Dr. L. Ottofy has removed to 1220 Masonic Temple.

Dr. Wm. Taft, of Cincinnati, visited Chicago recently.

Dr. Geo. H. Wilson, of Cleveland, visited Chicago in April.

Dr. Thomas Gaddes, lately of Denver, Colo., has returned to England.

The address of the editor of the DENTAL REVIEW is 1000 Masonic Temple.

Dr. A. W. McCandless, formerly of Davenport, Iowa, has located in Chicago.

Dr. C. R. Taylor, of Streator, Ill., was a recent visitor at the World's Fair City.

Drs. J. H. Martindale and E. H. Angle, of Minneapolis, were recent visitors to the World's Fair city.

Dr. E. E. Hughes, of Des Moines, and R. L. Cochran, of Burlington, Ia. were recent visitors to Chicago.

The annual meeting of the Maryland State Dental Association is to be held May 9, 10 and 11, at Baltimore, Md.

Dr. E. H. Angle, J. H. Martindale and W. C. Barrett attended the meeting of the Postgraduate Dental Association in Chicago, April 29,

As usual the St. Louis delegation was out in full force at the Illinois meeting. The clinics of the Wednesday morning session were not only interesting but largely attended.

Dr. C. F. Hunt, a promising young dentist of Chicago, died recently in the village of Austin. Dr. Hunt graduated in 1891 from the Chicago College of Dental Surgery.

In the coming winter a course of dental lectures will be delivered in a new college organized in Buffalo, to be known as the Dental Department of the University of Buffalo.

For quick drying of cavities after the rubber dam is in place, fill the cavity with chalk and blow it out with a chip-blower. It may be used to dry a wet ligature which it may be inconvenient to remove.

Liquid Vaseline may be used to saturate cotton as a temporary covering for medicaments in the root of a tooth when it will not bear the pressure of varnish or gutta-percha. It will endure for two or more days without becoming foul.

Dr. F. C. Marshall, the well-known mechanical dentist, died of paralysis, April 29, at his home in Chicago. He was formerly located in Aurora, Ill., but latterly had resided in Chicago. Dr. Marshall had been in ill health for the past two years.

The "Atkinsonians," a dental society of Chicago, contemplates fighting the advertising dental colleges "tooth and toe-nail." They will also expel from membership those who retain connection with or accept remuneration for services from an advertising college.

Dr. H. J. McKellops, of St. Louis, will buy any old books, pamphlets or journals if the owner will give the title and date of publication and language in which the works are published, with the price asked. It is his desire to collect the most complete dental library in the world.

The Supreme Chapter of the Delta Sigma Delta Fraternity held a special meeting in Chicago, April 30, 1892. The modified constitution, by-laws and one of the most advanced code of ethics were finally passed on and adopted. It was decided to hold the annual meeting at Lake Geneva, Wis., July 5, 6 and 7,

The twelfth annual meeting of the Texas Dental Association will be held in Fort Worth, Tex., beginning Tuesday, May 24, 1892, at 10 o'clock a. m., and continuing four days. The Executive Committee earnestly request you to attend this meeting. The Association will hold its session in the Y. M. C. A. hall, with a room for clinics close at hand. The hotel rates will be from \$1.50 to \$2.50 per day. All railroads into Fort Worth will give a rate of four cents per mile for the round trip. Tickets on sale May 23d, good to return until May 28th.

Do you moisten sandpaper discs with liquid vaseline ?

Boroglycerin diluted with water, is an effective and pleasant mouth wash.

The Nebraska State Dental Society will convene at Fremont, Tuesday, May 17, for four days.

There are 310 names in the list of members of the Dental Protective Association in the State of Illinois.

Dr. S. C. Hatch, of Sioux City, Iowa, the retiring President of the Iowa State Dental Society visited Chicago in May.

Dr. L. K. Fullerton, of Waterloo, was elected President of the Iowa Dental Society at the late meeting in Ottumwa.

The capital stock of the American College of Dental Surgery has been increased from ten to twenty-five thousand dollars.

Dr. A. G. Gray, of Emporia, Kan., wants to know why oxychloride or oxyphosphate of zinc sets. Will some chemist answer this question ?

The Southern Dental Association will meet at Lookout Mountain, Tenn., overlooking Chattanooga, the last Tuesday in July. Dr. Gordon White is President, and H. C. Herring, Secretary.

A prominent dentist recently made a mistake in syringes and injected some pungent solution containing carbolic acid instead of water into the patient's mouth, the cigars will be furnished on application to the p. d.

The burning question of the hour now, seems to be whether Dr. W. Mitchell or the Deans of the British Dental Schools will get the best of it in their controversy on education. We simply sit and look on at present.

Dr. C. S. Case, of Jackson, Mich., Professor of Prosthetic Dentistry and Orthodontia in the Chicago College of Dental Surgery will soon take up his residence in Chicago, and devote his whole time to the correction of irregularities of the teeth.

The Michigan State Dental Association will meet at Saginaw June 2, 3, 4, 1892. The profession are most cordially invited to attend.

J. WARD HOUSE, Secy,
Grand Rapids.

Dentist Fichte, in Aachen, was sentenced two weeks ago to nine months imprisonment and the payment of \$125 damages to Frau Helena Schmidt, of Aachen, because he pulled out all her teeth and charged \$100 for a set of false ones. Frau Schmidt wished to have but one tooth pulled and told him so, but while he had her under the influence of laughing gas he took out all of them. Five months ago Fichte's first assistant drew all the teeth of a Jesuit priest under similar circumstances, and was sent to prison for three months.—*Exchange*.

Dr. Taft of the dental department of the "University of Michigan, was given a reception April 15, by the Isaac Knapp Dental Coterie of Fort Wayne, Ind., at the residence of its President, Dr. Shryock. Dr. Taft's address on the occasion was what might be expected from one so distinguished. Of the seventeen dentists

in the city only nine are members of the above society. These meet fortnightly for improvement and to keep pace with all approved modern methods in both American and European dentistry. The invitations to last night's entertainment were extended to every registered dentist in the city. A number from adjoining towns were present, and many regrets from others received.—*Fort Wayne Sentinel.*

To the Executive Committee of the World's Columbian Dental Congress:

Gentlemen:—The Southern Dental Association has instructed me, their Secretary to cordially invite the Executive Committee of the World's Columbian Dental Congress to meet with them at Lookout Mountain, Tenn., on the 26th of July next. It is to be hoped that as many of your number will attend as possible.

Fraternally yours, H. C. HERRING, Secretary.

EDITOR DENTAL REVIEW:—Enclosed please find a celluloid mustard spoon (attached to the Heinz mustard bottles) which has for the past two years been used on a great many occasions for holding the tongue and cheek from teeth necessary to be operated on or examined. It has proven itself so useful that many others may also find operations made much easier (for themselves) by being the possessor of one. If the shank could be made stiffer or metal substituted for the entire spoon it would be much more serviceable. If this has been introduced heretofore I am unaware of it. It is so useful I could not forego the pleasure of sending and wishing others the same joy from having it. Yours,

E. K. WEDELSTAEDT.

One of the courts of Germany has rendered the following novel decision according to which American dentists will find it impracticable to be known as doctors, and even many who are entitled to that distinction by the universities of Germany, must abandon the use of the title. According to this decision there is no such title as "doctor" but there are: "doctors of medicine", "doctors of theology", "doctor of philosophy" and "doctors of jurisprudence." If therefore any one uses the title "doctor", with no further explanation, the public takes it, for granted that the individual in question has received the degree from some faculty teaching the specially which he practices. A dentist who holds the title "doctor of philosophy," and advertises himself as a "doctor" thereby implies that he is a "doctor of medicine" and hence utters a falsehood. Over thirty dentists of Berlin, have been fined for "bearing a false title."

"Fill your own teeth with Muddoline" would be better than the title selected for a substance which is offered to the unsuspecting public. We publish the circular accompanying the stuff. As a novelty it takes not only the confectionery, but the fixtures, building and all.

STOPS PAIN AND DECAY, LASTS A LIFE-TIME.—HOW TO FILL YOUR OWN TEETH.

This material offered to the public as an additional aid in preserving the natural teeth, possesses the desirable qualities of easy mixing and retention of plasticity long enough for proper introduction into the cavity. Any one without experience can fill their own teeth and those of their friends without any difficulty and do good permanent work. Becomes as hard as the tooth itself and is non-conducting, nonirritating to the nerve, giving no pain whatever to sensitive teeth, acts better on a tooth than either gold or silver, and will last a life-time. The

best time to fill a tooth is before it begins to ache. As soon as you find a decayed spot clean it out and fill with ———; your tooth will be as good as ever it was. If it has been aching it will in nearly all cases stop and be all right as soon as it is filled with ———, as this will exclude the air, moisture and food, and relieve the pain at once. You can fill your own teeth easily, quickly and without pain. ——— is easier to use than any other filling. It is not necessary to remove all the decay, as after ——— becomes hard, the decay will form a protection to the nerve. Dentists make filling teeth a painful and tedious operation; a great many people prefer to have their teeth extracted rather than endure such torture. Thousands of teeth are extracted every day that might have been filled with ——— and saved to do service for many years. Parents will find ——— very valuable for filling children's teeth. Mothers often neglect the temporary teeth, probably thinking that, as they are "only baby teeth," which must eventually be shed. But it is a most serious mistake to allow these teeth to decay or to be extracted, as they control to a great extent the regularity beauty and perfection of the permanent teeth. You can fill your own teeth with ——— as well as the average dentist can, it will save you a great deal pain, time and money, and best of all will save your own teeth. The importance of good teeth cannot be over-estimated, for actual service in conducting health to the whole body their value is beyond price. If you wish to maintain health and live to a ripe old age, keep your teeth in proper condition so as to thoroughly masticate your food. ——— has proved very valuable to a great many people who fill their friends teeth as well as their own, charging only a moderate price for filling, but making considerable money at odd times. Why suffer the agonies of toothache and torture in a dentist's chair when you can fill your teeth without pain with ———. Any person who buys a package of ——— or a set of instruments and does not find it all we claim it to be, can return within thirty days that portion of ——— not used with the instruments and get their money back by return mail. You cannot lose anything in trying ———. All we ask is to give it a fair trial.

We take the following from Dr. H. B. Wiborg's valedictory address:

So far as history discloses, Hippocrates, who lived about 400 B. C., is the earliest writer who treats of medicine. In his writings mention is made of the teeth, both with regard to their healthy and diseased conditions. He prescribed various remedies for their improvement, particularly as to abscesses, diseased condition of the gums and osseous tissue. He recommended the fastening of loose teeth, otherwise healthy, to the adjoining ones by means of silk or gold ligatures, and advised the removal of loose, decayed teeth, while the foul odors of the mouth he essayed to mitigate and correct with aromatic lotions and powders.

That mechanical dentistry, at least, was practiced in some degree among the ancient Greeks is abundantly testified to in ancient lore. The tenth of the celebrated Greek laws of the Twelve Tables, provided that any gold used to fasten teeth, might be burned or buried with the body, and this undoubtedly referred to what we to-day term *bridge work*. We also know that it was customary with these people to fill frail teeth containing large cavities with lead, in order to facilitate extraction.

The Greek historian, Herodotus, contemporary with Hippocrates, recites that the Egyptians practiced the art of dentistry. In his second book narrating his travels through Egypt, he states that the art and practice of medicine was divided among the Egyptian priesthood, each physician applying himself to one class of diseases only; some to the head; others to the eyes, and others to the teeth, etc. It has been recently announced in medical and dental journals that in one of the royal mummies taken from the catacombs of Egypt, a set of artificial teeth was found in which the plate was of wood carved to fit the roof of the mouth, while the teeth were of brass. Belzoni and other archæologists have found artificial teeth of sycamore wood, which had been fastened to the adjoining natural teeth by ligatures or bands of gold or silver. Although reports have, from time to time, appeared announcing the discovery of teeth in the mouths of mummies which have been filled with gold, they do not appear to be well authenticated, and we must, therefore in the light of our present knowledge of the practice of dentistry among the ancient Egyptians, receive such stories *cum grano salis* although it is not unlikely that the Egyptians, who were so proficient in industrial and mechanical arts, had some knowledge of the principles of the practice of dentistry, though necessarily crude and superficial.

Aristotle, the Greek philosopher who lived about 350 B. C., gives considerable consideration to the teeth in his book of problems and treatise on physiognomy, as well as in other works, and relates that one Erasistratus deposited in the temple of the Delphian Apollo a leaden instrument for extracting teeth. Although apparently of a trivial character, history credits one Celsus, who lived about 100 B. C., with having been the first to suggest the use of an iron file to remove such points of decayed teeth as hurt the tongue.

As we approach the Christian era we find that the custom of ascribing human ills to divine origin was not confined alone to the ancient heathen, for in the days of the primitive Christian Church, when reason was dominated by fanaticism, the invocation of Saints Appolonia and Lucy was considered a specific against toothache. This form of treatment would scarcely be considered conservative dentistry at the present time, and must have proved exceedingly discouraging to its votaries. From the beginning of the Christian era to the commencement of the seventeenth century darkness was upon the face of the world of dentistry, with only an occasional ray of light penetrating its misty veil, to be immediately swallowed up in the dense surrounding gloom of superstition and religious intolerance.

Directing our steps to the far east we learn that one Actius, an Arabian, (A. D. 300) was the first to discover the foramina in the roots through which the nerves and vessels enter into the pulp chamber; while Albacasis, an Arabian physician who lived about 1100 A. D., suggested means for replacing lost teeth by substituting other natural ones or those made of bone or ivory. Pursuing our steps still farther east to that ancient Eldorado of wealth and luxury—the Indies, we are informed that in the year A. D. 1176, (572 of the Hegira), a Hindu Rajah, of Benares, who was called Kutah-ud-dinabiek, a Turkish general under Mohammed of Ghor, conqueror of India, was slain, and his body only identified by means of the false or artificial teeth he wore, held in place by gold wedges and wires.

As summer approaches and it is necessary to have the person as well as the wardrobe put in order for the summer campaign, there is not unnaturally a run on the dentists. Now it must be known that there are some of the Boston dentists who are fairly to be described by no other epithet save "topping." It is true there is a social line which they are not allowed to cross, but they take their revenge—some of them—by the lordly manner in which they conduct their professional business, not to mention the prices which they ask for their work. Within a few days the following correspondence is said to have passed between a man, a member of an old Boston family, and one of these top-loftical dentists. The dentist to whom the man was in the habit of going having been removed by death the latter made inquiries for a reliable man, and was recommended to try Dr. Goldtooth. The following note was accordingly written.

Mr. Q. Z. Oldfamily wishes to know whether it will be possible for Dr. Goldtooth to give him an appointment for Thursday or Friday next, as he wishes to have his teeth examined before sailing for Europe.

In due time the following answer was received, on the swellest of stationery:

Dr. Goldtooth is not in the habit of receiving clients without a proper introduction, and begs that if Mr. Q. Z. Oldfamily wishes to become such he will take the trouble to be properly recommended. If, however, if Mr. Oldfamily is the son of the late X. Y. Z. Oldfamily, Esq., that would in itself constitute a sufficient introduction, and Dr. Goldtooth will be happy to receive him at one o'clock Friday.

Whether Mr. Oldfamily became a "client" of the bumptious Dr. Goldtooth I do not know, but this is the way in which we do it now.

There is one of the dentists here who affects great splendor in the appointments of his office, who has the clasps with which the bib-like rubber dam is fastened made of gold in the form of lions' heads with eyes of genuine rubies. The dam itself is of a rubber specially manufactured for him; the tools are surrounded by a coil of hot water which is supposed to keep them at the temperature of the mouth; the appointments are noted down on specially imported Japanese paper, and the whole process of dentistry is in this office conducted as if it were a social "function" of high importance.—*Boston Correspondence in Chicago Tribune.*

The American Dental Society of Europe will hold its eighteenth meeting at Basel August 1st, 2d and 3d.

Officers for 1892: President, Dr. Lyman C. Bryan, Basel; Vice-President, Dr. J. H. Spaulding, Paris; Treasurer, Dr. C. H. Adams, Frankfurt, A. M.; Secretary, Dr. Chas. W. Jenkins, Zurich. Executive Committee: Drs. Bryan, De Trey and Frick. Membership Committee: Drs. Spaulding, Davenport and Wetzel.

In order to prepare a programme for the meeting, the Executive Committee desire definite and early answers to the following questions, viz.:

Do you intend to be present?

Will you engage to read a paper? If so, please give full title that it may be announced in the programme.

Will you engage to demonstrate or to operate clinically? If so, state what, if

any, special arrangements you desire to be made. An ingenious amphitheater for accommodating a large number of spectators of clinics in the immediate vicinity of the patient will be loaned to the Society by the Swiss Dental Association, which holds its annual meeting in Basel May 14th to 16th. Clinics will be a special feature of the next meeting, several having been already arranged for. The University will place desirable rooms at the disposal of the Society.

The Committee are convinced that it would greatly promote the interest and profit of the occasion, if members who intend to be present would *arrange in advance to take some definite part in the discussion of the topics announced in the programme*. It has often occurred that some members were unable to present their views to the best advantage for the lack of incentive to preparation. Naturally no one cares to prepare his remarks beforehand if they are to be made at the end of a rambling discussion, or may be excluded altogether for lack of time. It also sometimes happens that certain subjects which have been discussed very fully already are allowed to take up a disproportionate amount of time. Both these evils are at least partially obviated when one or two members engage to open the discussion and are followed by speakers whose remarks are wholly extemporaneous. System and conciseness are thus combined with reasonable freedom of discussion.

Writers of papers would therefore contribute greatly to the worthy consideration of their subjects if they would engage, either personally or through the Committee, some fellow member—better two—to lead in the discussion. It is believed that by this means time will be economized and the labor of maintaining the interest at a high level more equally distributed.

The Reception Committee, consisting of several dentists of Basel, will provide recreation for members and visiting dentists, to fill hours not occupied by the sessions of the society. The *Verkehrs-Verein*, office on the Schifflande, near the Old Rhine Bridge, will also lend its assistance to make the stay in Basel pleasant, and will furnish *gratis* full information as to the best routes to and from the city, &c.

A card, with coupons attached, will be provided at a fixed price, to include various items of expense exclusive of room and breakfast at the hotels, thus enabling visitors to lunch and dine together, go on excursions, attend the banquet, concert, &c., at the minimum of expense.

August being the height of the season of travel, *rooms must be ordered in advance*. Questions as to local arrangements may be addressed to the Secretary or direct to the President at Basel.

Zurich, April, 1892.

CHAS. W. JENKINS, *Secretary*.

INCORPORATED.

Union Dental Company, at Chicago; capital stock, \$100; incorporators, Robert Steele, George Steele and James Hutt.

THE MISSOURI STATE DENTAL ASSOCIATION.

The twenty-eighth annual meeting of this association will be held at Clinton, Mo., commencing Tuesday, July 5th, and continuing four days. Members of the profession cordially invited to be present.

WILLIAM CONRAD, Corresponding Sec'y.,
St. Louis, Mo.

CAMPHORIC ACID IN ACUTE CORYZA.

A cotton wool tampon charged with a 2 per cent solution of camphoric acid, and introduced into the nostril, gives rapid and permanent relief in acute coryza. —*St. Louis Clinique.*

BASE BALL IN CHICAGO.

The Justi Insolubles and S. S. White Bicuspids played their first game at the grounds corner 61st and State streets Saturday May 7th. The result was a victory for the Insolubles with a score of 11 to 7.

INDIANA STATE DENTAL ASSOCIATION.

The Thirty-fourth Annual Meeting of the Indiana State Dental Association will occur June 28, 29, 30, at Lake Maxinkukee, Ind. The State Board of Dental Examiners will meet at the same time and place. All dentists and physicians cordially invited to attend.

G. E. HUNT, Secretary.

NOTICE.

SECTION V. Materia Medica and Therapeutics. Any member of the Section, or any proposed member for 1892, is invited to send to the Secretary the title of a paper to be presented at the next annual meeting at Niagara Falls, August 2, 1892. If not possible to be present, the paper will be read in the Section, and if found suitable will receive due attention.

A. W. HARLAN, Chairman,
1000 Masonic Temple, Chicago.

G. E. HUNT, Secretary, Indianapolis.

NOTICE.

American Dental Association, Niagara Falls, August 2, 1892.

Section VI. Physiology and Etiology. H. A. Smith, Chairman, 128 Garfield Place, Cincinnati, O.; L. E. Custer, Secretary, 28 East Third Street, Dayton, Ohio. You are earnestly requested to prepare a paper for this section, to be presented at the next meeting in August. Anything new pertaining to the work of this section, which may have been presented at your Local or State Society the past year, will also be highly acceptable. Please give this your early attention, in order that the report may be properly arranged.

COMING TO AMERICA TO STUDY.

We know that every year many Americans go abroad to study, but we scarcely appreciate the strength of the current setting this way. An examination of recent university catalogues shows that practically every civilized nation in the world is represented by students now in America. In a single great institution, the University of Pennsylvania, there are students from twenty-eight foreign countries. The Massachusetts Institute of Technology alone shows students of eighteen nationalities; seventeen are represented in the University of California, fifteen in both Harvard and Yale, fourteen at Cornell and Michigan, ten at Princeton, nine at Lehigh, and two each in Brown and Wesleyan. Even remote countries like Japan send many students here, Yale having this year seven Japanese students, the University of Pennsylvania six, Cornell five, Harvard four, and many other colleges one or two. Our excellent professional courses are the attraction to most of these foreigners, the University of Pennsylvania medical and dental schools showing to-day seventy-five foreign students, chiefly Europeans.—*Augusta Chronicle.*

THE PURIFICATION OF RESINIFIED ESSENTIAL OILS.

Old ethereal oils differ from fresh ones mainly in two points—first, that the terpenes contained in the former are partly polymerized and resinified in the course of time in consequence of exposure to light, air and moisture; and, second, that the esters and aldehydes existing therein have undergone a partial saponification or oxidation whereby they have become acid.

Dr. H. Werner gives the following method (in *Pharm. Zeit.*, No. 5, 1892) for their purification. The editor of the paper points out that this is not equivalent to a complete restoration, since this implies the reconstruction of the oil so as to contain the same percentage of every constituent, which is impossible. Nevertheless the "purified" oils will be useful for many purposes.

The first step is to neutralize the oils with a trace of soda. Next they are distilled with steam. A good arrangement is the following: The oil is placed into a short-necked, round-bottomed flask, connected with a Liebig's condenser. From an ordinary tin can, filled with water and heated by a flame, steam is generated and conducted by a bent glass tube to the bottom of the flask containing the essential oil. The oil will gradually become heated by the passing steam and will be carried over with the vapor. The distillate consists of oil and water, the latter of which may be utilized by itself, if there is any use for it. The oil thus obtained ought to be once more rectified, if a perfectly satisfactory product is desired. For this purpose it should first be entirely deprived of water by being dried over a caustic alkali, such as caustic potassa. This is best done by introducing the oil into a bottle, adding some sticks of the alkali, then heating to 50° to 60° C., and allowing the flask to stand over night. The oil is then distilled from a flask, with a delivery tube fused to it, over a naked fire. The vapors need not be cooled. To prevent bumping a little talcum is added to the oil.

When only small quantities are to be purified it is sufficient to treat the oil with an alkali and then to distil. The flask will then retain all the sticky resin. When larger quantities are to be treated the presence of the resin would be very objectionable and greatly interfere with the distillation.

Add 5 parts of calcined magnesia to every 1000 parts of peroxide of hydrogen when you bleach a tooth.

A NEW AND PRACTICAL USE FOR ALUMINUM.

This metal with its unlimited uses seems to be peculiarly adapted for surgical appliances, instruments and artificial limbs; its low specific gravity together with its great comparative strength are qualities that are desirable to be combined in an artificial leg or arm, and we predict a very large demand for the new aluminum limbs just about to be put upon the market by this enterprising house.

There are amputations of the lower limbs that surgeons deem desirable to make in order to remove a part or the whole of a diseased or injured foot, without sacrificing more of the member than the parts involved. We refer to amputations technically termed tibio-tarsal, tarso-metatarsal and medio-tarsal. These amputations have always been in disfavor with artificial limb makers, who have almost to a unit decried their license, and in too many instances have persuaded the surgeons to sacrifice much of a healthy leg merely to obtain a stump that would better accommodate the artificial limbs that they were able to produce.

The new artificial leg constructed of aluminum combined with the rubber

foot is adaptable to the above enumerated amputations. The socket of aluminum encases the stump and on account of the strength of the metal, the socket does not increase the diameters of the ankle to an objectionable degree in order to obtain the requisite strength; the metal is cast into the proper shape to give ease and comfort to the wearer; the aluminum socket is terminated by a rubber foot, which not only produces simulation of the natural foot, but provides a soft, springy medium to walk upon, and a resistant, phalangeal ball to raise upon while walking, running or ascending stairs.

It is obvious that by this invention the amputation can be conditional upon the injury, and the artificial limb conditional upon the amputation. In this alone the invention of the aluminum and rubber leg will prove not only a boon to the man who has suffered the amputation, but the solution of a problem that has many times perplexed the operating surgeon, as it eliminates all the objections heretofore pressed against amputations in the region of the tarsus. The surgeon may thus rejoice in being able to observe the *old* and consistent law of amputating with the least sacrifice.

Aluminum also plays an important part in the construction of strong and durable artificial arms. The socket of an arm being made of that metal is light and strong, and will enable the wearer to subject the artificial arm to severe uses without danger of destruction. It will not crack from overstrain like wood; it will not become soft and limpsey or foul from perspiration like leather; it is lighter than any other metal and is amply strong for every purpose.

These inventions will unquestionably mark a new era in the industry and add much to the prestige of the house that has already achieved distinction in its humane work.

MEETING OF THE AMERICAN DENTAL ASSOCIATION, AUGUST 2, 1892, AT
NIAGARA FALLS.

The following circular has been promulgated:

CHICAGO, April 16, 1892.

DEAR DOCTOR:—The meeting of the American Dental Association will take place at Niagara Falls, the first Tuesday in August. We are trying to get a condensed report of the important work that has been done in the different societies of the United States of a scientific nature, during the year; also a description of any new practical methods or appliances. Will you coöperate with us in this effort, and see to it that at least a synopsis of the papers that have been read in your society during the year, and a brief report of anything new in practice or appliance which you or any member of your society may have, is forwarded to me? I will see that all such communications are forwarded to the proper sections of the American Dental Association, to be incorporated in a condensed report.

Although the American Dental Association is made up of representatives from local societies, thus far there has not been the bond of union that there should be between the State and local societies and the American Association. The work and progress made by local societies has not been reported or given to the main body, hence much of the growth that should come from such coöperation has been lost to the entire profession.

When the plan proposed is intelligently carried out, we are sure to have meetings of so much profit that no society can afford to fail of representation, even

though they defray the expense of sending delegates, and the increased value of these meetings to the whole profession cannot now be estimated. Each society is entitled to one delegate for every five members.

Do not rest satisfied with sending one delegate, but let each society give us a full delegation of representative men. This is doubly needed this year, as much of the arranging for the World's Fair Meeting will be planned during the year, and every section should be thoroughly represented.

If you expect to attend, let us know, and information regarding Hotel and Railroad Rates, etc., will be sent you. In buying your Railroad Ticket be sure to take a receipt showing that you have paid full fare in going to the meeting.

By attending to the above requests, *promptly*, you will greatly aid in increasing the interest in the next meeting and in raising the standard of work done by the American Dental Association. You will also bring prominently before the profession the work you are doing.

Hoping to hear from you, I remain,

Yours very truly,

J. N. CROUSE, Chr. Ex. Com.,
2231 Prairie Avenue.

CHICAGO DENTAL SOCIETY.

CHICAGO, April 26, 1892.

To the Members of the Chicago Dental Society:

GENTLEMEN,—It seems fitting at this time, when all departments of industry and thought are being quickened by the approaching World's Fair, that the dental profession should begin to show that it feels the same stimulus. All signs indicate that the World's Columbian Dental Congress will bring together in Chicago the largest body of Dentists ever assembled. It is time, therefore, to begin to realize the responsibility resting upon us, so that when visitors from all parts of the United States and foreign countries come to our city we shall be prepared to acquit ourselves creditably. There can be no doubt that, when the time does come, Chicago will do her best—which means that the congress will be an unqualified success. It will be mainly through the different organizations that this happy result will be attained; therefore, it is highly important that each society should be working up to its greatest capacity.

The officers of the Chicago Dental Society, in order to give it an efficiency corresponding with its age and representative character, urge upon members the necessity for new interest and special effort in its behalf.

Members are asked to attend the meetings with the utmost regularity circumstances will permit;

To take pains to have friends who come to town plan their visits so as to attend the meetings;

To be prepared to take part in discussion of topics announced;

To voluntarily contribute something outside of the announced program;

To contribute something of scientific or practical interest, voluntarily at any meeting. This will be announced in the printed program if the President or Secretary be informed beforehand;

To obtain new members.

The officers will endeavor to make the program for each meeting an attractive

one, and ask the earnest coöperation of each member to this end. It is especially requested that cases in practice, casts, appliances, methods, medicaments, new and old books, instruments and specimens be presented. Ample opportunity for their description will be allowed and an electric mouth lamp will be provided when patients are brought to the meetings.

Believing that by benefiting others you will benefit yourselves, and that the society will be given a new impetus by the personal interest and participation of every member in all its proceedings, we remain, Sincerely Yours,

J. W. WASSALL, President.

L. L. DAVIS, Secretary.

THE METHOD OF DISINFECTION USED BY THE SANITARY AUTHORITIES OF PARIS.

Attached to the sanitary department of Paris there are a number of disinfecting stations, in which clothing, bedding, furniture, and any other article of household implement is disinfected, either by order of the authorities or at the demand of private individuals or corporations. Connected with these stations are also wagons carrying all necessary implements to perform the operation of disinfection in private houses.

In the disinfecting stations the main process consists in exposing the substances first to the action of superheated steam, and afterward spraying them with a solution of corrosive sublimate, 1, in 1,000, to which are added tartaric acid in the proportion of 75 gr. to the quart, and a few drops of an alcoholic solution of tincture of carmine or indigo. The steam apparatus used is that of Geneste & Herscher, which is now employed by the Government and a large number of cities and public administrations, both French and foreign. After fifteen minutes of steam heating and fifteen minutes of drying, the disinfection is complete.

As for the vaporizers (for spraying), which are constructed by the same house, they are designed to project the antiseptic liquid in a very fine spray over all objects that cannot be placed in a stove, such as leather, furs, etc., and also to disinfect rooms and their contents. With the solution mentioned above this mode of disinfection is done rapidly, without any injury even to objects of high price, provided the operation be performed with some care. The perfect efficiency of this process has been many times demonstrated. It is destined to replace disinfection through sulphurous acid gas, which is a difficult, always incomplete and illusory process in the conditions of current practice, and so lengthy as to render the use of it much more injurious than useful as regards the generalization of disinfection.

The municipal disinfecting stations of Paris are open to the public gratuitously, either when one carries the contaminated objects thither directly, or requests the employees to come to the house for the objects, and, what is indispensable, to disinfect the house at the same time. The service is performed by special men whose experience has been tested, and it is supervised with much care by Menaut, the director of municipal affairs.

When the wagon starts the disinfectors must be sure that it contains the following material: (1) the vaporizer pump and several bottles containing the disinfecting liquid, which are confided to their care and responsibility and must never be entrusted to any one else, no matter who it may be; (2) a bottle containing a

quart of solution of permanganate of potash in the proportion of 12 gr. to 1,000; (3) a canvass bag containing the working costume—say, for each man, a canvass cap, a pair of canvass trousers, a canvass blouse fitted to the neck and wrists, and shoes; (4) several wrappers closed in any way except by leather cords, and which must be of different forms for mattresses, bolsters, pillows, coverlets, etc., and must be marked with numbers or letters in red, of large size; (5) rags, designed for wiping purposes; (6) two large sponges, a scrub brush, and a brush with a handle; (7) a tool bag; and (8) a jointed ladder, provided with rubber at the extremities of the uprights.

As soon as they reach the house the disinfectors carry their material to the room to be disinfected, and put on their working clothes before entering it. They first, with a brush, scour the linen spotted with blood, with the aid of the permanganate solution, after which they put into wrappers all the objects that are to be carried to the stove, such as mattresses, bedclothes, linen, curtains, clothing, etc. Then, after pouring the contents of one of the bottles into the vaporizing pump, and after filling the latter with water, they project a spray of disinfecting liquid against the walls, floors, woodwork, carpets, furniture (especially the beds) night tables, and all the other objects left in the room.

No portion of the rooms to be disinfected, nor any of the objects that they contain, must be neglected.

The mirrors and their frames, the pictures and art objects, have to be rubbed with rags that have been dipped in the disinfecting solution. The carpets and the hangings left in the house on account of their bulk have to be removed and treated on both sides with a spray of the disinfecting fluid. The floor or the walls that they cover have likewise to be disinfected. The vessels and utensils that have been used by the patient, as well as the water closets and toilet tables, have to be washed with the disinfecting solution. After these operations are finished the disinfectors must take off their working clothes and put them in a bag provided for them and take them to the disinfecting stove along with the bags containing the objects that are likewise to be placed in the stove. As soon as the objects to be disinfected reach the establishment they are unloaded and the whole must, as soon as possible, be disinfected. After disinfection the objects are carried back as soon as possible to the house of their owner by the wagon especially designed for the purpose.

Such is the programme followed in great part by the disinfecting service of the municipal station. All the details of this programme have their importance, and it is because they can be carefully executed by such service that the latter is the only one that is now capable of inspiring confidence in the citizens of Paris.—*La Nature and Scient. Am. Suppl.*

AMERICAN DENTAL SOCIETY OF EUROPE.

The American Dental Society of Europe will hold its eighteenth meeting at Basel, Switzerland, August 1, 2 and 3. Members of the profession are cordially invited to attend. Clinics will be a special feature of this meeting. The University will place desirable rooms at the disposal of the Society, and an ingenious amphitheater for accommodating in the immediate vicinity of the patient a larger number of spectators than are able to witness operations under the ordinary circumstances, will be loaned by the Swiss Dental Association. Programmes may be had on application to the president, Dr. Bryan, of Basel, or to

CHAS W. JENKINS, Secretary.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The annual meeting of the National Association of Dental Examiners will be held at Niagara Falls, Monday, August 1, 1892, at 10 A. M. All State Boards are invited to send representatives.

FRED A. LEVY, Secretary.

OBITUARY.

Died at Tipton, Iowa, April 2, 1892., of œdema of glottis, Herman Pasedach, D. D. S., in the twenty-fifth year of his age. Dr. Pasedach was born in Berlin, Germany, in 1866. Came to this country when fourteen years of age. Being scientifically inclined he entered upon the study of dentistry, and spent several years in the office of Dr. S. A. Garber, of Tipton, with whom he entered into partnership April 1, 1892. He was a graduate of the State University of Iowa Dental Department, class 1892, one of the brightest of his class and a favorite of one and all.

REUBEN JOHN KIRK.

WHEREAS, It has pleased an all-wise Providence to remove from our midst our well-beloved brother, Reuben John Kirk; and,

WHEREAS, In his untimely demise our fraternity has lost a true and faithful brother, an honest and upright man; his family a loving and dutiful son and brother. Therefore be it

Resolved, That the Supreme Chapter Delta Sigma Delta Fraternity, in executive session assembled, does hereby sincerely mourn the loss of him who has been called from us in the prime of his young life; and be it further

Resolved, That we extend to the family of our deceased brother our sincerest sympathies in this their sad affliction, and commend them to the great Comforter, who is Omnipresent and ever willing to aid; and be it further

Resolved, That a copy of these resolutions be sent to the family of our deceased brother and a copy handed to the dental journals for publication.

C. E. MEERHOFF, }
GEO. J. DENNIS. } Committee.

RESOLUTIONS PASSED BY THE ALUMNI ASSOCIATION OF THE CHICAGO COLLEGE OF DENTAL SURGERY.

Your committee begs leave to report that since the formation of this association, the following members have passed away, viz.: Drs. J. Grant Emery, William Witt, G. E. Brownlee, E. J. Kautsky, A. G. Moffett, the dates of whose demise we have been unable to ascertain. Also Drs. E. B. Ward, who died April 25, 1891, in Virginia, Joseph A. Swasey, January 12, 1892, at his home in Chicago, and D. W. Runkle, at the Presbyterian hospital, Chicago, January 21, 1892.

Your committee submits the following resolutions, viz.:

WHEREAS, It has pleased an allwise Providence to remove from our midst Drs Wm. Witt, G. E. Brownlee, E. J. Kautsky, A. G. Moffett, E. B. Ward, Joseph A. Swasey and D. W. Runkle, and

WHEREAS, In their demise this Association is deprived of seven worthy and respected members, and the dental profession has lost some of its brightest and most promising lights:

NOW, THEREFORE, *be it resolved*, That the Alumni Association of the Chicago College of Dental Surgery hereby most sincerely deplore the loss of these young members who have been called from us in the morning of their existence.

Resolved, That we extend our sincere sympathy to their bereaved and sorrowing relations and that we commend them to the Great Creator of Heaven and Earth for comfort and support; and be it further

Resolved, That these resolutions be spread upon the records and a copy of the same be sent to the dental journals for publication.

T. A. BROADBENT, }
C. H. WRIGHT, } Committee.

THE DENTAL REVIEW.

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No. 6.

ORIGINAL COMMUNICATIONS.

THE INTERPROXIMATE SPACES.

BY G. V. BLACK, M. D., D. D. S., JACKSONVILLE, ILL.

In an article read before the Odontographic Society of Chicago, and published in the DENTAL REVIEW of July, 1890, and also in a series of articles on the management of enamel margins, published in the *Dental Cosmos* last year, I have called attention strongly to the matter of care in the preservation of the form of the interproximate spaces. I have also, in some degree, called attention to the evils which follow in case of failure to observe this care in the treatment of proximate cavities. My feeling is that much more needs to be said of this matter before the profession, as a body, will realize its full importance. This is a result of the long habit of disregard for the form of these spaces, and of doing violence to the gum septum. In bringing this matter before you now, though I have something more to say, my principal desire is to provoke a discussion of it. Many men read articles of the kind I have written and pass them by without giving the subject sufficient study. Their attention has been but momentarily occupied by the thought presented, whereas if they should engage in a discussion of it in this society they might be led to think more deeply of the subject, and make trial of the plans of practice proposed. Most of us learn of these subjects, and improve our methods of practice slowly, and adopt this or that thought only after it has repeatedly found temporary lodgment in our minds. When I stop to review

my own progress I find that this has been the case with myself, and my observation points out that the same is true of most men.

In this paper it is not proposed to endeavor to discuss all of the causes of failure of proximate fillings, but to confine it to three points relating particularly to the interproximate spaces. These are: imperfect forms of proximate contact; bad forms of, and insufficient width of, the interproximate space, and needless injuries to the gum septum.

There are other prolific causes of failure of proximate fillings, such as imperfect excavation, bad forms of the enamel edges, bad arrangement of the lines of enamel margins, injury to the enamel edges while packing gold, imperfect adaptation of the filling material to the enamel edges, insufficient or faulty anchorage. While all of these are regarded as prolific causes of failure, any one of which might well serve as the basis of a paper, I shall not now discuss them.

The propositions to which I shall now direct your attention and endeavor to maintain are these:

1st. A healthy gum septum of good form, or filling the interproximate space, is necessary to the cleanliness of the space.

2d. An interproximate space not filled by the gum septum, and of such form as to retain food débris, serves as a pocket for the accumulation and decomposition of such débris, with the formation of acid products, which cause the beginning or recurrence of decay of the teeth.

3d. An unhealthy gum septum and an unclean space, are a constant menace to the health of the peridental membranes, and a frequent starting point of disease of a serious character.

4th. Proximate fillings must be so formed, and finished, as to produce a proximate contact that will not hold food débris in its grasp, nor leak the same into the interproximate space during mastication, and thus injure or destroy the gum septum. Thus will be maintained, with the greatest certainty, the health of the teeth, the gum septum, and the peridental membranes.

5th. The full width and proper form of the interproximate space must be maintained so that the gum septum shall have sufficient room to maintain its health and perform its functions. Bad forms of the interproximate space should be improved when treating proximate surfaces.

6th. When the interproximate space has been lost, or its width diminished, by previous loss of the contact points of the teeth from caries, which has allowed the teeth to drop together, the space must be regained by judicious wedging, and the fillings so formed and finished that the width of the space shall be maintained.

7th. The gum septum must not be seriously injured by the use of wedges in separating the teeth, by temporary fillings crowded against the gums while treating pulp cases, nor by the improper use of instruments in finishing fillings.

The first proposition, that a healthy gum septum of good form, or filling the interproximate space, is necessary to the cleanliness of the space, would seem to need no argument to make it apparent to every one; for if the space and gum septum are not of such form as to be self-cleaning, or the space is not perfectly filled by the gum septum, it simply becomes a catch-basin for *débris*. This is true except in abnormally broad spaces without contact of the teeth. This condition can rarely be produced artificially. The artificial production of permanent separations to obtain self-cleaning spaces was extensively tried in the first half of the present century, and its failure is so generally admitted that it may be dismissed with this reference. The space, artificially produced by filling, closes by the teeth falling together, producing a shrinkage of the arch to that extent; and generally the form of the space produced is found to hold lodgments of food *débris* when the teeth have fallen together. Therefore the experience of the profession has shown that space produced by the file to give room for operating is bad practice. In case there is no intention to produce a permanent open space, but only to give room for finishing the filling, a proximate contact cannot certainly be made that will not hold food *débris* in its grasp, or leak into the interproximate space to such a degree as to destroy the gum septum, or seriously injure its arched form by breaking down its central portion causing food to lodge and undergo decomposition with acid products. This becomes a cause of recurrence of decay. I may state here that in what I shall term the arched form of the gum septum the tissue is fullest in that portion central from buccal to lingual between the teeth, so that food *débris* that may have been forced past the contact point and thus lies loosely in the space is constantly dragged out by the sliding of food to the buccal or lingual sides of the teeth and gums in the act of mastication, thus continuously cleaning the space. This is a form

of the gum septum that is cleanly though it may not fill the interproximate space.

THE FORM OF PROXIMATE CONTACT.

Now what do we mean by reproducing the correct form of the interproximate space? Is it the exact reproduction of the original form of the tooth? No, not always. Many natural teeth are well formed, and not a few are of bad form. When the forms were originally excellent we will do well to reproduce them. We will do well to reproduce good forms, or at least improve the forms, in those cases in which the forms were originally bad.

What are good interproximate spaces? Who among us have studied the forms of the teeth, the forms of the interproximate spaces, the forms of the proximate contact, and the gum septum closely enough to answer this question. I can give my views and start the discussion of the subject, feeling certain that the close study of it will serve to correct many grave errors in practice. It is certain that there are good forms and bad forms of these spaces, and so long as we are unable to clearly define good forms we will certainly be unable to produce good forms in our treatment of proximate surfaces.

There is one principle that obtains in the make-up of every good interproximate space, and that is a form of proximate contact that will not hold food débris in its grasp. This does not depend entirely upon the rigidity of the contact, or the firmness with which the teeth resist separation, but upon form. We cannot expect the accuracy and rigidity of the contact to absolutely exclude food débris. What form, then most certainly gives the required result.

All know that the teeth have motion in their sockets, much restricted certainly, but still a certain amount of motion, by which the contact points are rubbed one upon another. Suppose, for illustration, we take two marbles with perfectly polished surfaces and press them together, giving them ever so little sliding motion upon each other, and at the same time press some fibers or particles between the contact points and try to make them stay in the grasp of the contact. It will be found impossible, such things slip out one way or another. Now this is the principle of the contact between the teeth? It is the contact of rounded surfaces in which the actual contact is a small point rounded

quickly away in every direction, so that débris of any kind forced in is quickly removed by natural processes. In the study of the best formed arches we find the contact between the teeth based on this principle from the incisors to the molars, and as dentures are presented to us in our offices, if we study them carefully, we will find that they correspond sharply to this principle; the contact is effective in maintaining clean spaces, while as they diverge toward broad flattened contacts they are correspondingly faulty.

In this respect we find a constant gradation in comparative anatomy, from the sharply rounded contacts that prevail in the carnivora that eat tough stringy food, to the broad, flattened contacts in those animals that subsist largely on grain or brittle food, of which the horse will serve as a type. In the omnivora we find a middle form between these extremes. In man this middle ground is generally maintained, but we will find gradations that in a degree typify them both. In some we find very strong square tooth crowns that proximate with comparatively broad, flattened surfaces, while the majority of even broad crowned teeth form contact with rather small round points. In the long bell crowned teeth the contact points are much rounded and small in area though the teeth may be large.

The contact between the marbles which I have given as typifying the contact between the teeth is substantially correct, but the contact points of the teeth are not perfect spheres as in marbles. They are generally more rounded in one direction than in another. And in many instances the mesial surface of a tooth is nearly flat at the contact point while the distal surface of the neighboring tooth is sharply rounded. Between the incisors, the contact points are rounded most in the labio-lingual direction. Between the bicuspid the rounding is often about equal, but between broad crowned teeth the rounding is greatest in the occluso-gingival direction. In the lower molars, the contact of the first and second is generally rounded in all directions, while between the second and third it is somewhat broader from buccal to lingual. In the upper molars the contact becomes broadest from buccal to lingual, but it is sharply rounded from occluding to gingival, with a broad space to the gingival; however, in many dentures the contact between the upper molars is quite sharply rounded from buccal to lingual as well.

A mode of measuring the area of the contacts of the teeth is

very desirable, and the plan that I have used, though only approximating an actual measurement is of much value. Take a thread of some given size, say size A of sewing silk and pass it into the interproximate space. Then bring the free ends together and draw them tight enough to bring the thread close around the contact point, but not so tight as to strain the teeth apart. The space between the threads where they leave the space will show the area of the contact, plus what the thread by reason of its size lacks of reaching the actual contact. In this it will be seen that the size of the thread cuts an important figure, for on account of the rounding of the surfaces a large thread cannot be brought so near the actual contact as a small one. After the thread has been brought fairly tight, and has been observed, draw it gently through the contact and observe carefully how nearly the two parts approach each other, and especially whether the thread comes through the contact with a snap, as it should if the contact is well rounded, or drags through with more or less grating. This latter is characteristic of a flattened contact, whether made by a file or by the wear of the contact points against each other in mastication. If the thread is drawn parallel with the length of the teeth the buccolingual breadth of the contact will be shown; and if it be drawn at right angles to the length of the teeth the occluso-gingival breadth will be shown. This plan of measurement is valuable in the examination of the contacts that we make in our treatment of proximate surfaces.

The form of the space to the gingival of the contact seems to be important. The best formed spaces broaden quickly from the point of contact so that any particles of food that are forced past it in mastication are not held, but are at once loose and freely movable so that the next morsel of food that is crushed between the teeth, as it glides aside over the lingual and buccal sides of the teeth and gums, will catch and carry them out of the space. To this end the arch form of the gum septum from buccal to lingual is important.

When we study closely the beginning of caries in the proximate surfaces of the teeth of young people, we find that it almost always has its point of first penetration of the enamel slightly rootwise from the contact point. This occurs in individuals in whom there is rather a strong predisposition to caries early in life when the festoons of the gum septa are so prominent as to prevent the cleaning

of the spaces, or to cause them to hold *débris*. In individuals in whom the predisposition to caries is less strong, or in whom the proximate contacts of the teeth, and the gum septa are of better forms, such decays may not occur. When we find the festoons of the gingivæ large continuously for a considerable time in young people (when not swollen from calcareous deposits) we may expect a number of proximate decays. This is, I think, because these enlarged festoons interfered with the natural process of cleaning the interproximate spaces during mastication. Therefore an overfull gum septum is worse than one that is underfull, but presents a good arched form. This condition of overfullness is frequent in young persons. A gum septum that is lowest centrally between the teeth, forming a pocket in which *débris* is retained, is bad, whether the condition is caused by overfullness of the festoons or from the breaking down of the central portion.

Many persons of middle age, or past, whose teeth have presented good proximate contact, and who have escaped with little, or no proximate decay in early life, are found to have one or more proximate decays beginning near the gingival line. In these cases we generally find that the contact points have been flattened and their area much increased by wear of the one against the other, and that in the particular space, or spaces, where decay occurs, these flattened points of contact have held food *débris* in their grasp, and this has been forced more and more against the gum septum until the central portion of it is broken down, forming a pocket in which decomposition with acid production has occurred. Caries is the consequence. It is notable that in these cases the decay is much further toward the gingival line than that which occurs in younger persons when the contact points are less flat or in whom the gingival festoons are overfull.

What shall we do with these cases when they are presented to us before caries has occurred. Patients not unfrequently consult us early, when the wedging of food into the space is causing discomfort from pressure on the gum septum, and upon close examination we find a much flattened contact, and the gum septum being broken down. Shall we treat these cases at once by wedging sufficiently and then forming sufficient cavity to restore a rounded contact by filling, and thus relieve the patient of discomfort at once? or shall we wait until a considerable part of the tooth has been destroyed by caries? Suppose decay is found to have begun,

shall we fill the cavity and finish with a separating file, and leave the flat contact to renew the mischief? Certainly we should wedge sufficiently to restore the rounded form of contact and finish toward the cervix with a file with a rounded face, widening the space to the gingivæ of the contact as we find it in the best forms. In many of these cases we may exaggerate the rounding from buccal to lingual to advantage. Then food that happens to be forced past the contact will be freely movable and the space will be kept clean in the natural way.

These cases of flattened contact by wear with their results furnish a picture of much that is being done in the treatment of proximate cavities. A decay has occurred. The cavity is, we may say, well excavated, skillfully formed, and carefully filled. The contour of the occluding surface is restored, but the proximate surface is shaped with the separating file, leaving a broad flat surface instead of the rounded contact point. And especially no concavity is formed to the gingival of the contact point, so that in this direction also the grasp of the contact holds food that is forced in, instead of leaving it loose and movable as it has passed into the space. The next that is forced in sends the first on to the central portion of the gum septum and holds it firmly. The gum breaks down, or is absorbed, so that the cervical margin of the filling is uncovered, decomposition and acid production occurs in apposition with the enamel margins, and decay recurs.

In this it will be seen that the operator has produced the condition, as to form, that seriously endangers the permanence of the filling. The safer plan is to get the necessary space to reproduce the contour of the proximate surface and finish to a rounded point that will preserve the gum septum and a clean interproximate space.

THE SPACE.

I will now speak of the interproximate space apart from the form of the proximate contact. I have already referred to the fact that in normal conditions this space is filled with the gum septum to the contact point, and that the integrity of this tissue is important to the continued health of the teeth and their membranes.

It is of the utmost importance that the full width of the interproximate space be preserved in order that the gum septum shall have sufficient room for the maintenance of its tissue in the full measure of health and function. It is a matter of observation that

wide interproximate spaces rootwise from the proximate contact maintain the health and cleanliness of the teeth better than narrow ones, or that bell crowned teeth are, other things being equal, cleaner and healthier than teeth with thick necks and narrow interproximate spaces. While we cannot make bell crowned teeth of thick necked ones, we can maintain the full width of the spaces provided by nature; and this should always be done by gaining sufficient room to complete our filling to represent the full original mesio-distal diameter of the teeth. In no case in which there has been original contact can this be done without artificial separation of the teeth for finishing the fillings. Separation by the use of the file is no longer to be thought of. It does not give the room we want, and is bad practice. The dentist of to-day has no use for the separating file as such.

But we are called upon to do more than maintain the space. The contact points are frequently destroyed by caries, and the space has become much narrowed by the teeth dropping together before patients apply for treatment, and occasionally this has proceeded so far that the necks of the teeth touch each other, annihilating the space altogether. In these cases it is not a question of obtaining room for operating, but a question of regaining the lost interproximate space. We may operate, or make a filling in much less room than is required to reform the interproximate space that is so necessary to the renewal of the gum septum and the continued health of the surfaces operated upon.

To some this may seem like rehearsing an old story. I have written of it plainly and pointedly before (See DENTAL REVIEW, July, 1890, page 452), yet I was surprised to see in a recent number of the *Dental Cosmos*, over the name of one who is giving instruction in operative dentistry, a case in which the central incisors had dropped together from the loss of their proximate contact and were wedged apart for the recovery of the space (regulated) and then filled to the normal form, cited as something new. (See *Dental Cosmos*, April, 1892, page 278.) I should not have presented this paper were it not a fact that I am continually meeting cases in which this whole subject has been neglected, such as this: A lady, a stranger, coming from a distant city, presents herself complaining of pain in the region of the lower first and second molars. I find two large proximate fillings with insufficient interproximate space, and a separating file contact; the fillings, I am informed, have been in

position eighteen months. The gum septa are almost entirely destroyed centrally between the teeth and packed with decomposing débris. The whole region between the teeth is exquisitely sensitive. Now this patient tells me she has repeatedly complained to her dentist of this pain, and that he was unable to find cause for it. Only one thing is to be done; wedge until the space is regained, and then remove the fillings and make others of proper form to preserve the space and protect the gum septum. But many, yes the greater number of these cases, go on without much, if any, complaint of pain until the gum septum is destroyed and caries has recurred at the gingival margin.

Will the gum septum regain its former size and fill the space if it be given sufficient room and proper protection afforded?

This is a pertinent question, and often an important one. It may be stated as a general rule, that in patients under middle age the gum septum will be completely reformed, provided the border of the alveolar process is still of full height. Especial care as to cleanliness should be observed for a time—a month or two—after the operation. Indeed I am in the habit of seeing such cases several times within a few weeks that I may insure the renewal of the gum tissue, and sometimes resort to stimulating lotions in addition to rigid cleanliness.

In some cases we cannot expect a complete renewal of the tissue, that is, the interproximate space will not be filled to the contact point. In these the form of contact is all the more important, and especially it should be sharply rounded, and narrow, from buccal to lingual. Then the tendency will be for the short gum septum to assume the arch form, being highest just under the contact point. In this case the gliding of the food to the buccal and lingual during mastication will drag out all particles that may be forced in past the contact point, and keep the space clean. A close examination of mouths in which the septa have become short, and in which the spaces remain clean, will show plainly that this is the principle upon which cleanliness is maintained. A little study will enable us to copy them in our operations.

Those cases in which the septum of the alveolar process has also been broken down, often remain bad spaces after all I have been able to do for them. It is in these that a departure from the normal types of contact may be tried. Some will do better if the contact is removed considerably toward the gingival, and the grind-

ing surface cut away, either to buccal or lingual—generally the latter—so that the act of mastication will induce a strong gliding motion of food in such direction as to clean the space, or the whole buccolingual width of the grinding surface may be sloped away to a position reasonably near the contact point. In doing this the filling is rounded boldly out from near the neck of the tooth to form the contact point and the concave portion finished with suitably formed instruments. This plan may also be used in teeth that are so badly broken down that it is not thought well to build on the full form of the crown from fear that the strength will not be sufficient to bear the strain of mastication.

INJURIES TO THE GUM SEPTUM.

I will now refer more particularly to injuries of the gum septum during operations upon proximate surfaces. This tissue suffers as little perhaps from temporary abuse as any other, but it is liable to serious injury from long continued maltreatment. One of the most constant abuses occurs in cases in which the treatment of root canals, or exposed pulps, requires some kind of temporary fillings. In these, it seems to be common practice to fill both the cavity in the tooth and the interproximate space with cotton saturated with some kind of gum or with gutta-percha forced into position without reference to compression of the gum tissue. Indeed severe compression is often recommended as a means of getting the gum tissue out of the way while making the filling. In this way the gum septum is often destroyed, or a deep pocket formed centrally between the teeth. After the treatment is finished and the cavity filled, even when the proximate space and contact are left in good form, this gum septum often fails to recover; or is only partially restored to its former fullness and strength. If the proximate contact is faulty it is irretrievably lost, for the vacant interproximate space or the pocket which has been formed centrally between the teeth, fills with *débris* which undergoes decomposition with the formation of acid in contact with the unprotected margins of the newly placed filling. This insures a recurrence of decay even though a perfect filling has been made.

The destruction of the gum septum may have been regarded as legitimate in times past, especially after we had cohesive gold and before we had rubber dam. The mode of practice has, in a manner, been inherited by us of the present day. But close observa-

tion of cases has shown its evil results, while improved methods demonstrated that this mutilation is unnecessary. It is easy to take a thin blade, such as one of Harlan's scalers, or a somewhat broader blade of the same pattern, and place one edge of it against the neck of the tooth operated upon and lean the other against the proximating tooth, and while holding this rigidly in place insert a gutta-percha filling firmly and at the same time protect the gum septum and give it sufficient space. This requires almost no time. It is convenient to have two or three widths of these blades for the purpose. Cotton and sandarac is an abomination and should have no place in a well regulated office.

In wedging teeth, injury to the gum septum is far too common. In times past many of us have driven wooden wedges between the teeth, crushing out the entire gum septum at a blow. I hope that mode of separating teeth is not practiced by any of us now, for it was essentially bad. I only allude to it to show how our profession has grown up in disregard of the contents of the interproximate space.

Although we may no longer drive such wedges, we are often guilty of destroying this tissue in wedging with rubber, cotton, etc., by injudiciously placing the wedge so that the gum is compressed, or by allowing it to slip from the proximate contact, where it should always be held, into the wider part of the space against the septum of the alveolar process, where, besides causing the patient extreme pain, it will do a lasting injury to the gum tissue. Possibly but few of us are entirely free from this, as an accident of practice, but to do this frequently, or to fail to observe great care to avoid it, and to use all means to mitigate the injury in case of accident, is bad practice.

Injury to the gum septum in finishing proximate fillings often becomes a serious matter. Think of pushing and pulling a separating file back and forth to file down a proximate filling with the saw on its edge, tearing the soft tissue at every stroke, often until the last of the gum septum is lacerated beyond recovery, if not entirely removed from the space. Then the fillings are finished with flat proximating surfaces that will catch and hold food between them and prevent the recovery of any gum tissue that may be left in the space.

The separating file should not be used to trim proximate fillings. When it becomes necessary to cut to make room between a newly

made proximate filling and the neighboring tooth for passing finishing instruments a thin separating file might be used, but a fine saw held in rigid frame is better. This should be used carefully to make the one cut and then immediately laid aside. Every instrument used afterward should present a smooth polished edge to the gum tissue. The instrument with which I do the bulk of the trimming is the thread saw. This is turned with its smooth polished back to the gum tissue and cuts toward the occluding surface of the tooth. It is insinuated under the overhanging portions of the filling, and the trimming is expeditiously done with the minimum of injury to the gum. The trimming about the buccal, labial, or lingual angles, that this instrument will not reach, is done by the smooth edged draw files and with disks, and the contact point is rounded to the desired form. This work cannot be done with the same expedition and effectiveness with the separating file. Its shape is unsuited to the work.

Many dentists are using the revolving disk for finishing proximate surfaces. So far as the form of the proximate contact is concerned this is as bad as the separating file. The tendency of the disk is to cut away the prominence of the contact point, and this occurs almost inevitably when the endeavor is made to finish the proximate surface with it. Yet the disk is a very useful instrument for rounding the buccal or lingual angles of proximate fillings. I make much use of it for this purpose, but do not use it between the teeth, except occasionally a rim disk when I have plenty of room to pass the rim safely beyond the contact point.

Now it may be said that the dental profession have used flat separating files for forming the proximate surfaces of fillings from time immemorial, and certainly their fillings have not all failed. Certainly not. Many good fillings have been made in spite of the unsuitableness of the flat files, and there has been a continuous advance in the treatment of proximate surfaces up to the present time. So please do not consider me pessimistic in this matter. But many teeth of bad form and faulty texture have never decayed. Many contact points flattened by wear have never leaked food into the proximate space. Also, many fillings of bad form have done excellent service. Yet it is the teeth of bad form and faulty texture that decay most. It is the badly worn contacts that oftenest do damage by leakage. It is the fillings of bad form that are most liable to failure.

Continually the question is being asked, "why do so many proximate fillings fail?" In this paper I have tried to point out, not the *sum*, but some of the whys with the hope that a close study of it may reduce the number of failures.

SOME NEEDED REFORMS IN THE PRACTICE OF DENTISTRY.

BY JAMES W. CORMANY, M. D., MT. CARROLL, ILL.

The first reform to which I would call your attention is that students graduating from some of our dental colleges be *not* taught that the college from which they graduate is the only one teaching the latest improved methods in the practice of dentistry, and the graduates should not be sent forth with the idea that they "know it all." They will find a few dentists perhaps practicing in the country who have stood the heat and burden of the day for lo, these twenty years, and who know a little something. The student is not entirely to blame for this for he is taught it, and the egotistical ones carry it away in a great degree. I have had not a few experiences with these, and this has led me to suggest the first reform.

There may be some dentists with long necks and cross-eyed one way that might be successful in filling approximal cavities in the anterior teeth from the lingual side, thus preventing much gold showing from the front. Some claim that by the use of the mirror they can accomplish good results, but I am led to advocate a reform in this method, first by securing plenty of room by the use of wedges and time, and thus filling from the front. Better work may be done in this way with less inconvenience. In the practice of filling proximal cavities in bicusps and molars with amalgam, without proper separation, there should be lasting reform. It is so easy to run a file between the teeth, cutting away more tooth substance than is necessary, to use no rubber dam, to clean out the cavity hurriedly, insert the amalgam, run a thin bladed instrument between the teeth, take out the surplus amalgam with a thread, wipe off the excess on the grinding surface with a piece of wet spunk, and dismiss the patient.

May I ask in what condition these cases are likely to be found?

Usually with flat surfaces nearly in contact, with sufficient amalgam between the teeth to fill several cavities, with space enough to allow the packing of food causing irritation to the mu-

cous surfaces and great annoyance to the patient. The patient tries in vain to get out the pieces of amalgam with a wooden toothpick, and failing, applies to the dentist, who then uses a thicker file to dislodge the excess of amalgam. This of course leaves a larger space between the teeth, but the patient is consoled by the promise that when the third molars erupt they will press the other teeth forward so as to close the spaces.

This picture is not overdrawn one iota, and it all might have been avoided by gaining proper separation before operating.

Amalgam is all right if it only receives the attention it deserves. Were these same approximal fillings to have been of gold, separation would have been demanded regardless of time, because with gold, the operator must see what he is doing. I ask for the reform that the same consideration in this particular be given to amalgam as to gold.

Consider a large cavity on the anterior proximal surface, extending well on to the grinding surface of a superior first molar, second bicuspid absent, and the antagonizing lower tooth articulating amidships. This tooth would have demanded heretofore a large contour filling with screw anchorage requiring time and patience for its insertion. When finished it might appear a monument to the skill of the operator, but the first closure of the mouth with some hard substance between it and the opposing tooth would dislodge it. The reform I would suggest for this is a gold crown completely surrounding the tooth, thereby making the operation permanent.

Supposing a case with a cavity on the distal surface of a lower second molar, with pulp exposed, the third molar in place, and the first molar absent. It is far better in this instance to extract the second molar, and bridge from the third molar to the second bicuspid, than to attempt a filling. The patient may object to this, but right here a reform is needed to impress patients that they must not place their ignorance against your experience. You all know the annoyances of a cavity in this particular place.

In most cases the crown of the second molar faces toward the front and the third molar tips forward more and more every day. I feel very anxious about this particular reform for I have passed through all the tortures incident to such a cavity, and after suffering for years, thanks to our worthy President, I had the second molars removed and bridges made, one on either

side. No tongue can describe the comfort I now enjoy, and this brings me to the consideration of crowns and bridges.

One day when I returned from the noonday meal I found sitting in my office a friend from a neighboring State. The first thing that attracted my attention was the appearance of his upper central incisors. I looked at him in horror, for the two central incisors were capped with gold. They appeared as if the cutting edges of the teeth had been ground down about the sixteenth of an inch, an impression taken and caps struck up to fit the teeth. The caps did not reach the gum by a line nor did they fit the teeth snugly. They stood away at least a line, and the border next to the gum was left with a square angle between which and the gum there lodged the remains of several meals. Think of it, gentlemen, the man had a short upper lip and thin mustache. Every time he laughs he shows the upper teeth as far as the second molar, and these two crowns of gold glaring in the sunlight. The work was done by a graduate of a college which claims that what its graduates don't know is not worth knowing.

Next, a gentleman called to inquire about a friend. He had a bridge of four upper incisors, anchored to the cuspids with caps of the same kind referred to. There was the same space between tooth and cap, and cap and gum, allowing the lodgment of food, and in this case something worse, for the man chewed tobacco. Fortunately the incisors were porcelain faced.

I might mention other cases similar to these that have come under my observation but these two will be sufficient to call your attention to a needed reform in this direction. Briefly stated, a crown on any of the six anterior teeth should be porcelain faced, the gold band should not only go to, but under, the gum fully one-sixteenth of an inch all round the neck of the tooth to be crowned. The band should be free from irregularities, and should fit closely, and be burnished so smoothly that no irritation will ever occur to the soft parts.

If this is done, food or other deleterious matter cannot lodge around it.

It is not always necessary to remove the pulp of a tooth to be crowned. I have set a number without doing this, and have four in my own mouth, the abutments for bridges. The pain is more severe in preparing the tooth for the crown, but I believe a better feeling is given the patient after the crown is on a few days. Cold

water held in the mouth will lessen the pain and hasten the setting of the cement.

There is not enough machinery used by the majority of dentists. I feel sorry for those who are still pounding away with the automatic mallet. The instrument is good enough in its place, but why torture the patient with its thump, thump, thump, when the electric or Bonwill machine will do the work in one-third the time?

The patient may be dismissed sooner and it is better for every one concerned. I called on a dental friend of mine last fall in a neighboring State and almost his first salutation was that he was very busy—worked from daylight till dark. I asked him of what his practice mostly consists, and he said operating. (Of course no dentist nowadays would admit that he labored in the laboratory.) Upon inquiry as to what he had to assist him in his extensive practice, he answered two automatic mallets.

After twenty years spent in the practice of dentistry, I have reached this conclusion, that there is nothing too good for the dentist in his profession, socially or spiritually. He is entitled to the best of everything, the best appliances suited to his skill, and his machinery should be run with power outside, and with brains inside, himself. If there is water power in his city he should use water motors; if no water use electricity; if no water nor electricity hire some one to mallet and run his engine for him. What is fifty or one hundred dollars properly invested in the best dental appliances compared with the convenience of having machinery that will go by simply pointing the finger at it. The dentist has enough worry and vexation of spirit without being deprived of the many improvements that money will buy. I am almost willing to guarantee that within six months after one hundred dollars has been paid out for this labor-saving machinery enough extra work will have been secured to more than pay for this expenditure. Again, and lastly, the dentist who has so far succeeded in educating the community of which he has been a member up to the necessity of caring for and preserving the natural teeth, is deserving of a crown—not a porcelain crown, nor a porcelain faced crown, but a crown of gold surmounted with points, and each point set with a diamond of rarest beauty.

CONTOUR FILLINGS—WHAT THEY SHOULD BE.

BY GEO. H. CUSHING, M. D., D. D. S., CHICAGO.

In the September, 1891, number of the DENTAL REVIEW, is a very able article on the subject of contour fillings, by Dr. C. N. Johnson, with which you probably are all familiar. In that the subject is discussed in a more general way than has been attempted in this paper, and you are urged to read it again very carefully.

It was thought that though nothing new was to be presented in this brief article, yet that some of the most important points made by Dr. Johnson could be more forcibly impressed on your minds by the models here exhibited and the discussion which it is hoped will follow.

The word contour means "the outline or general periphery of a figure," and the term "contour filling," was in the first instance intended to imply the complete restoration of a tooth which had lost a part of its substance by decay, to its original and natural outward shape.

When the use of cohesive gold was claiming the attention of the leading operators of the profession, and the possibilities of the material were developed under their skillful hands, the ambition of some of the most prominent of them, led to their advocating this complete restoration of the lost parts of the teeth, even to the extent of reproducing the cusps and all irregularities of the grinding surfaces of molars and bicuspid.

In their enthusiasm and devotion to the æsthetic, they for the time being, lost sight of the character of the material with which they had to deal, the purpose which fillings were intended to serve and in fact most of the principles which underlie the operative treatment of the teeth by filling.

In consequence of such advocacy, this practice became very general and was continued by a large number of the profession for a long time, but experience soon taught the majority the lack of wisdom of these methods and they then modified their practice and teachings accordingly, though a few still cling to the idea of complete restoration of original contour. Thus the term "contour filling" has come to have no real significance, as a descriptive term, as it is applied indiscriminately to all operations where any part of the original shape is restored, and this indefiniteness has led to the waste of much valuable time in discussions at society meetings,

wherein the disputants frequently are only disputants, because each attaches a different meaning in his own mind to the word contour, while practically they stand very near together in their methods. It is hoped that this paper may tend to lessen this evil, but its main purpose is, if possible, to establish upon sound principles some general rules as to the shapes which should be given to fillings that in any degree restore original contour.

It is not intended in this paper to discuss all the steps of the operation of making contour fillings, and aside from the main purpose as just intimated, reference will only be made to the method of anchorage in the classes of cases which will be spoken of.

The preservation of the teeth and securing the greatest degree of usefulness of these organs for the longest possible period, being the object in operative treatment, it only remains to consider what influence contour may have for or against the accomplishment of this end.

It may be laid down as the absolute rule that the contour of all fillings which will be subjected to great strain should be such as to most fully protect them from any force of impact that would tend to dislodge them or to drive them away from the walls of the cavity.

This rule, of course, only applies after the restoration of such natural contour as may be essential for hygienic or æsthetic reasons, and may be more profitably followed in the case of proximal and crown surfaces in molars and bicuspid.

In these cases, where the decay extends below the point of natural contact of the proximal sides, it is essential to reproduce the natural contour, to such an extent that the fillings may, when finished, touch again at the same point. This is necessary in order to preserve the interproximal space toward the necks of the teeth and also to prevent food from crowding between the teeth and upon the gums, where it sometimes causes serious disturbance.

Beyond this point a restoration of natural contour is rarely if ever to be tolerated.

From the point at which restoration of the natural contour on the proximal sides ceases to be essential up to the termination of the filling in the crown, the surface should gradually slope, or, to reverse the statement, the surface of the filling should slope downward from its most remote edge, either mesially or distally, as the case may be, to the point at which it is desirable to commence the restoration of the original contour on the proximal surfaces.

The anchorage of such fillings should be made as strong as possible without weakening the tooth. There should be if possible a strong square base at the cervical portion of the tooth, a firm seat—that shall be at a right angle with a perpendicular line drawn on the proximal surface, and the walls should be made as nearly parallel as possible.

Unless the walls are extremely thick and the dentine very firm it is better not to make any undercuts or grooves, but to rely entirely upon the proper seat and thorough anchorage in the crown. If they are thin or the dentine of poor quality grooves and undercuts must not be made. If the square seat cannot be obtained, as large retaining pits should be drilled as can be done without endangering the pulp. Of course this is only a general rule and subject to such modifications as the peculiarity of individual cases may render necessary.

Where such shapes as have been described are given to fillings of this character the force of impact tends to slide over the surface and not to drive the filling away from its seat.

If on the contrary the filling is built up so that its grinding surface presents a horizontal plane even, the force of mastication will tend constantly to drive it outward from the center of the tooth. If the restoration of the original contour is carried still further and the marginal ridge is raised in the normal form, the strain upon the filling will be much greater and its value correspondingly impaired.

Now in many cases, where the cusps of the natural teeth which antagonize the gold filling are very long, it is necessary to grind them off, as well as to shape the surfaces of the fillings as above, described. Without thus grinding off the cusps, it would in some instances be impossible to get sufficient thickness of gold to insure any stability of the filling.

It will undoubtedly be thought and urged by some, that such extreme precautions are not necessary, if cohesive gold is solidly built up as it can be from secure anchorage made at all possible points.

Such a defense of the practice of restoring the natural contour in situations that have been considered, can only come from a want of knowledge of the materials we have to deal with and the principles upon which our operations are based.

If two fillings could be placed in precisely corresponding situ-

ations, by the same hand, one contoured as laid down in the above rule and the other contoured approximately to the original shape of the tooth and we could be assured there would be no recurrence of decay,—of the first it might be predicted with assurance that it would last indefinitely,—while of the second it could positively be asserted that it would fail sooner or later. The latter might under favorable conditions last for some years but it would eventually be certain to give way simply through the agency of mechanical force.

A grave error that many operators fall into, is the belief that gold can be so thoroughly impacted into strong tooth structure as never to be disturbed or displaced except after a recurrence of decay.

Such a belief ignores the fact that the ability to resist mechanical force has a limit, and when the force exceeds that point something must give way.

The great malleability of gold renders it impossible for it to sustain through a series of years the constant impacts imparted in the act of mastication, without eventually being drawn away from its bearings upon the edges of the cavity, and even were it less malleable and did it not yield to the force of impact at all, the structure of the tooth would eventually give way to the incessant pounding to which the filling would be subjected.

The cases thus far considered are the most important and the ones most likely to fail from improper contouring, but there are others where the observance of this same principle will prove of great value, though it can be carried out to only a limited degree.

In the building down of incisors where a considerable portion of the labial wall has been lost, it is desirable to slightly slope the cutting edge of the filling from its most distant mesial or distal proximal corner up to the point of contact with the tooth. This would unquestionably lengthen the term of usefulness of such fillings as compared with those that were absolutely restored to their original contour. In all such restorations—sharp corners should always be slightly rounded.

With regard to the anchorage of such fillings—the same rule holds good as given before.

There is one other situation in which the restoration of natural contour would be undesirable, and that is in proximal fillings in the

superior incisors, where the palatal angle of the filling should be cut away so as to leave a self-cleansing surface.

Enough has been said though imperfectly, to call attention to the great danger attending the improper contouring of fillings and probably to provoke such discussion as will prove profitable to us all.

PRESIDENT'S ADDRESS.

BY W. H. TAGGART, D. D. S., FREEPORT, ILL.

One of the most natural things to do when one has friends who have made a decided success of life, is to congratulate them and wish them years of future prosperity.

As your presiding officer for this year, I feel as though, while other Presidents have had sufficient reasons for praising your good qualities, and feeling proud of the standing you have made in the dental world, none more than myself have a right to congratulate you, for you are a year older, and in better working order than ever before, and the fact that you are twenty-eight years old, and have never taken a backward step, shows a sturdy manhood that makes you by right the most looked up to State Dental Society in the world.

Another thing, you are the father of four flourishing district societies whose names are already receiving favorable mention from the outside world, and their meetings are being compared in interest to yours, which should spur you on to always be the head of the house, and not allow the youngsters to outstrip you.

On account of having to make so many suggestions for the smooth working of the society, my address will necessarily be disconnected, and will lack the quality so essential in an essay, of sticking to the subject.

I feel so much the importance of attending dental societies, and meeting men who are leaders in their profession, that I cannot urge on you too strongly the help it will be to you to identify yourselves with your local societies.

Do not think you cannot afford it, for if you make it a business to be known as a progressive dentist, your patients will be perfectly willing to pay all your expenses and feel it an honor to do so.

The ones who write our papers, and furnish food for thought,

are not, as a rule, men to the manor born, but have good ideas, and it takes them weeks and months to bring out their thoughts in presentable form; and it is very embarrassing to the author of a paper on bacteriology to have those who discuss the paper so soon run ashore on thoughts pertinent to the subject as to have the discussion take the direction as to the advisability of using plain teeth or gum sections in an artificial denture; and out of compliment to the essayist I would suggest, that you stick to the subject under discussion.

There seems to be rather a general feeling that the Committee on Dental Science and Literature, which now consists of three members, should be reduced so as to hold one person responsible for the work done in that direction, and while not casting reflections on the efforts of previous committees, it seems quite reasonable to suppose that if the responsibility for a comprehensive report was centered in one person the society would profit by the change.

We have now been working two years under the system of having all business attended to by an executive council, and as nearly as any one system can give satisfaction to all members, I think this has done so, but as the aim of the workers has been to please all and at the same time conserve the best interests of the society, it seems as though for the good of the society the constitution which now places the power of nominating a President and Vice President in the hands of the executive council should be so changed as to place these honorary offices entirely at the disposal of the society.

The Illinois State Dental Society has always been noted for the liberal spirit shown toward men who advocated new and novel methods or appliances, and I hope the time will never come when we will try to discourage the granting of patents to members of the profession, as was done at the last meeting of the First District Dental Society of New York, at which meeting they incorporated in the by-laws their disapproval of professional patents.

It seems as though they were trying to place inventive genius on a lower plane than literary ability, because you never hear of their trying to handicap an author by incorporating in the by-laws objections to his copyrighting his book, which he certainly does for the same purpose that the inventor obtains his patent, and that is the hope of monetary reward.

Patent laws do not exist for inventors alone, but for the public, and the organic law, the constitution of the United States, says they are made to promote the progress of science and the useful arts.

Men create values by invention, and it seems almost communism to ask men to invent and not receive reward or to ask them to divide profits, and I hope the Illinois State Dental Society, with her well established broad views in extending open arms to men of literary ability, will include in her embrace the no less useful and deserving inventive genius.

In conclusion, let me draw your attention to the importance of lending every effort to make the World's Columbian Dental Congress a success, for as the time draws near for that meeting we are on the threshold of being recognized as an independent profession and as the whole is no stronger than the weakest part, do not let the weak point come from the Illinois joint, but let each dentist of our State feel that on his pushing powers depends the success of the meeting for he who doubts his own powers shrinks from putting them to the test, while he who is convinced that he can succeed has already made the most important step in that direction.

DENTAL LEGISLATION.

By E. K. BLAIR, D. D. S., WAVERLY, ILL.

The dental profession seems to be awakening in a slight degree to the importance of dental legislation—particularly so in Illinois. This, coupled with the fact that I have had some experience in trying to secure such legislation, is the only excuse that I offer for accepting an invitation from your committee to write a paper upon a topic so well worn and so uninteresting to many. In considering the subject matter of such a paper, I find it impossible to expel from my own mind the thought that any attempt on my part here and now to formulate a law would be justly regarded as presumptuous. Feeling so, you will not be surprised when I say to you that I shall only consider the subject by reference to our past experience in trying to secure such legislation and by further overlooking the field in which your labors are to be extended, if another effort is to be made. This society, through its committees, has appealed to the XXXVth and XXXVIIth General Assemblies. It has been my privilege to know fully the character of the work performed by these committees—the hopes they have entertained, the

difficulties met, the results attained, and so far as it was in my power, the causes that led to these results. These observations and this experience has fully convinced me that no desirable legislation will be secured, save through the agency of this society, and that only by means of a committee regularly appointed—heartily and enthusiastically supported.

In saying this I do not mean to speak disparagingly of members of the profession not members of this body. Our State is so large—the population so great—its chief legislative body so unwieldy and the growing conviction that it is unwise to extend the power of existing boards, so firmly fixed that to secure recognition of our right to more advanced legislation is no small task. Undertakings of greater magnitude have claimed the attention of more potential organizations than this, without desired success.

There is now no collective force within the State, with either equal or approximate strength to this society. Surely none endeavoring to accomplish this work, so that I feel warranted in making the assertion, that it is through you and your committee that success is to be attained. You may not be capable at present of doing all you may wish to do—all the profession, as a whole may desire. If not, who individually or collectively will be found equal to the task? How is the work to be done? Of first importance it seems best to dispel two illusions. First we must teach the law-maker, that as a society we are not extra-judicial of the remainder of the profession, and secondly we must by dint of constant intercourse with those outside our organization, teach them that their cause is our cause—that in all matters pertaining to the welfare of the profession and the rights of the people we are one and the same.

I regret very much being compelled to recognize the fact that so many well meaning dentists have failed to unite with the parent society in this State. Is there not slight reason to hope that this very agitation of the subject in hand may be the means of bringing into closer relationship members and nonmembers of this society and the further hope that the ultimate result may be that those heretofore not enjoying the unmistakable benefits of such membership may cast their lot here and become co-workers, not only in an effort to secure better laws under which to practice, but in all the varied branches of our profession.

Your committee must be composed of your strongest, most self-sacrificing workers. The exigencies of political life will be at

once manifest to them when they observe how few members of the XXXVIth and XXXVIIth assemblies will occupy seats in the XXXVIIIth. They will in this respect find almost a new field for their labors. This, however, will not be true, when they turn to consult 1,400 practitioners throughout the State.

Those with whom I have conversed in the past may remember that I have never entertained the belief that it is either proper or feasible to expect the passage of a new law unobserved by the mass of the profession. In fact, no one thoroughly familiar with the needs of the profession or the task of securing the passage of such a measure desires or approves such a course. Far better that we fail more than once, if the agitation and discussion by dentists all over the State will only awaken the slumbering toiler in his narrow office to the realization of his rights as a citizen and dentist. It may be that he who learns to seek out the representative from his own district, and urge upon him his disapproval of a pending bill because, forsooth, he himself does not comprehend its provisions, may some day in the near future take on a new growth and go so far as to familiarize himself with the provisions of the proposed measure, learning that it is not only harmless, but helpful, and give to it his intelligent, earnest support. The greatest hindrances to passage of bills in the past has been interference in the work by dentists who have frankly admitted that they did not know the character of the law sought by your committee and feared molestation themselves.

Only those who have combated such opposition realize its power.

First, gain the respect as a citizen and dentist of the assemblyman of your district and then urge upon him your desire to have him quietly refuse to support a measure touching the welfare of your profession, or, that which is still worse, to openly oppose it and the "new comer" who is pressing the passage of the bill will indeed find it difficult to overcome the desire of said assemblyman to serve well, as he terms it, "his neighbor-dentist and constituent." Such opposition, if we succeed, must be met, and the best method is by elimination. Adequate preparation and proper organization will bring to your support the aid of all desirable; and arm you with evidence sufficient to cope with any obstructionist that may be found interfering with an effort to place the profession in this State on a par with other States in point of proper legal enactments.

From another source has come opposition. It is from that class who desire to ply their vocation, be it bartering teeth-filling materials or diplomas—unwatched, ungoverned and unmolested. Like the poor I fear they will be with you always—but unlike the poor they neither merit your sympathy or forbearance. If the passage of a new law does not make it possible for our State board to mete out justice to this class by a judicial procedure, plain, simple, and yet effective, then the people and this profession had best call a halt and our efforts to benefit mankind and elevate our profession be declared unavailing.

It is gratifying to me to here record that when differences of opinion as to form of law or method by which it should be executed have been entertained by contending forces in this society, these questions have been settled by discussion within our own ranks and in no way that would jeopardize the passage of any bill. How gratifying this is. Discussion tempered with reason in its proper sphere is harmful to no one. We can only hope to attain the best results in matters pertaining to the public or our profession where the fullest and freest expression is encouraged. All should be heard, due weight given to every suggestion, and from the combined thought of Illinois dentists we can form a law that will take rank for justice and equity with any in existence.

If what I write be true, it remains for me to urge the necessity of establishing some fixed method of reaching dentists individually throughout the State, to the end that a very large per cent of our profession unite in pushing forward the work. If we act collectively our strength will manifest itself. Those who are unheard remain unnoticed. Those who speak the most intelligently and persistently are quickest served. I would not advise any of you individually to engage so freely in politics as to neglect your professional duties, but I do yield to the temptation here to urge upon all present the necessity of giving proper heed to governmental affairs. Our profession will only become more powerful when we as members of the great contending political organizations make our wants known and our strength as political factors felt.

This does not suggest that which is improper. It is an appeal to you to occupy that position, politically, which you upon comparison with all other classes are fully entitled to. I have no sympathy for him who fails to do his whole duty as a citizen because he fears the loss of a patient. What we most need is: first, a com-

petent dentist, and second, a good citizen who acts from a belief that he is right politically, and so believing spurns to permit either vantage ground, professional or political, to interfere with the other. How to reach members of the profession, secure their advice and aid, or prevent a blind opposition, will be the most arduous task confronting your committee. No less than two or three hundred have already shown unmistakable signs of hearty coöperation in the work. They will be found ready to assist in any way within their power, and there can be no doubt but that our past experience has better fitted us for a renewed effort. This is not the work of a day.

In fact it may upon consultation seem wise to petition the XXXIXth rather than the XXXVIIIth General Assembly. Act when we may, let us comprehend fully the position occupied by all with reference to this matter. If we meet opposition successfully, we must meet it intelligently. Give this committee one year, or even six months in which to act—arm them with the services of a competent clerk, and when the final struggle is at hand, they will be so equipped that the enemy will be vanquished. Let each dentist be sought out, his aid invoked, or his objections met. With untiring energy this committee must put itself in possession of every fact bearing upon the work. In this connection our State Board may be helpful. A well arranged "Exhibit" showing the existing laws in all the States, as well as the proposed law for this State, for easy reference, placed in the hands of every dentist, will aid in bringing to our support many. This may also be used with force when we appeal individually to the legislators.

Most of the work of this committee should be done before the legislature convenes. Our bill should be introduced early and pressed forward. It occurs to me that having had our bills favorably considered by the Judiciary Committee twice in the House and twice in the Senate, and never having suffered a negative vote but once, and that upon a light house, that we are armed with very strong evidence so far as the opinions of past legislatures are concerned of the justness of our cause. With what weapon we vanquish the enemy does not now seem so important to me as it once did.

The end to be attained is the same. For one I am willing to trust to the product of the brain of any committee appointed by this society. Looking over this entire field—possessing a full

knowledge of the work of past committees and inspired with a desire to do the greatest good to the greatest number no one need fear the result, and all may safely lend a helping hand.

No desired end can be attained with the major portion of the profession divided as to the kind of legislation wanted. To unite those at present desiring new laws and those who are moribund upon this matter will be helpful to all of us professionally and otherwise.

That which we most need is a method by which early and vigorous legal steps may be taken to bring offenders of the law into courts of justice. Our State Board is a necessity. It should be clothed with power to appear as plaintiff without bonds for cost, and a sworn statement of the Secretary filed with the proper authorities ought to be sufficient to open any case. No class of men are more amenable to the law should any desire to prosecute for offenses real or imagined, than we. An intelligent profession welcomes all statutory enactments that protect the people and invites the closest scrutiny of the service we render mankind, and while it does so, it appeals to the law making power to cease putting a premium upon ignorance and charlatanry by continuing in force the present law, ineffective because you cannot execute it—unwise because it does not meet the wants of a progressive people and profession.

IMPROVEMENTS IN PORCELAIN BRIDGE AND CROWN-WORK.

BY E. PARMLY BROWN, D. D. S., NEW YORK, N. Y.

It is not a question of whether a permanently attached denture to restore lost teeth is the proper thing or not. That has passed. The question now is, what kind of bridge and what kind of crown is the best for the case at hand?

The fact that a large majority of dentists are not inserting bridge dentures, is no proof that a large majority would not be practicing the art if it were known to them.

The broad-minded practitioner diagnoses his cases and selects from a large assortment of methods the best treatment of each case; the man of one idea always has gold for filling, or if never gold, always amalgam, or always gutta-percha, or always the zinc oxide cements.

The same may be said of bridge and crown work.

The bridge worker who always cuts off his pier teeth is circumscribed in his knowledge and usefulness in the art ; ten cases pass him by unattended to where he operates on one ; lacking, as he does, the hardihood to attempt the destruction of good teeth for piers, or failing to get the consent of the patient to attempt such a rash proceeding. The reasons are obvious to bridge workers ; a few cases of denuding fairly good teeth of their enamel, with pulps alive, to make ready for their capping ; or amputating such teeth for piers for bridges, satisfy the operator, and he shrinks from any more of that kind of work, which brings more curses than compliments from the patients.

The practice of inserting from one to four or five teeth into gold or amalgam filling attachments will broaden the field of usefulness of the operator.

To say that you have seen failures of fillings holding bridges in place for any great length of time, as an argument against the system, has the same weight as the assertion that you have seen fillings fail, as argument against the wisdom of filling teeth.

I recently extracted a very loose left upper central, from the mouth of a clergyman in New York in the presence of another dentist, on account of root absorption, which the living central had attached to it and the living cuspid, anchored into gold fillings, a lateral incisor bridge, a porcelain gum plate tooth with soldered gold backing and cross bar; this bridge had been in its place without repair for eighteen years, having been inserted in 1874 in Salt Lake City by Dr. Calder, which bridge tooth and natural tooth I offer for your inspection.

With modern solid gold and improved gold alloy fillings, and most cases more favorable for good attachment than this presented, who can longer have doubts of the great possibilities of the future in this line?

The fact that your essayist has inserted over a thousand bridges mostly by filling attachment, many of them having been in about eight years, and most of them being under his inspection, accounts for his faith in the practice.

The beginner who with doubts and misgivings fails in his attempts, does not prove that one cannot succeed who has become expert by years of study and practice.

Ten years experimenting with porcelain for crowns and bridges

has made your essayist a firmer believer than ever in porcelain for most cases; very often using gold crowns for single teeth or roots, or piers for bridges where not in sight; and once in a great while a gold bridge where indicated.

The improved porcelain bridge, should rest firmly on the ridge, the surface in contact with which is constructed with a platino-iridium swaged plate, the cross bar and tooth or teeth being first soldered to the plate with pure gold as in continuous gum work; a moderate amount of tooth body first applied, and baked, then full contour obtained at the second baking, gum enamel to finish if necessary, at lower heat, at which baking any small crevices could be filled in with English body, which fuses at about same heat as American gum.

Soft platina caps for ends of roots, either for single crowns or bridge piers (as designed by your essayist), where caps are indicated, made by fitting band, soldered with pure gold, and cut into slits as far as the end of the root, then this aggregation of points is burnished or pressed, one at a time, on to the end of the root, taking its exact form, no matter how irregular; the pin is then pressed to its place, waxed, invested, and soldered with pure gold, unless a porcelain crown is being used with pins, then soldering is not imperative, baking without soldering being sufficient.

The porcelain denture when completed is as cleanly as the natural teeth. It is nearer to nature in form and appearance than any work your essayist knows of, and he is satisfied that in the near future, when the facilities for doing the work are to be had, and the dentists become conversant with the art, that it will be a delight to patient and operator as well as a profit to both in every way.

The difficulty of the work will tend to increase fees; for that which is easy to do most anybody can do, without much study or effort, and therefore will be done cheaply.

If the essayist could not have porcelain bridges he would be putting in good bridges made on swaged platino-iridium plates. fitting close to gum on ridge, teeth backed with platina, caps made of platina bars of platino-iridium square wire, all soldered with pure gold, cap crowns made also of platina and pure gold flowed upon them for appearance.

The contour of this structure to be restored as much as practi-

cable to natural form. This would have some of the points of perfection of the porcelain work, lacking mainly in artistic appearance, lacking some in natural contour, some in strength, some in cleanliness, and much in economy of metal and labor. Six points of advantage claimed by the porcelain work over the metal work described, which has the advantage of the ordinary gold bridge that does not rest firmly on the gum, in several respects, principally in the additional support obtained by so resting.

These gold bridges I would insert as I do now the porcelain bridges, mainly with filling attachments, some cemented to root piers, and some to cap crowns.

The question of solid gold fillings to anchor bars, extending from bridges into cavities in pier teeth, is solved by using the Bonwill electric mallet with current from the Edison circuit if possible, if not a strong battery, or the next best force to thoroughly condense the gold.

The tooth to be braced at first by heavy retaining instrument held in left hand until the filling is anchored, then the tooth should be braced by an appliance devised by your essayist, which he has used for several years, made of a bar of tin pointed and curved properly to hold against the tooth malleted on, held either by left hand of operator or by an assistant, which bar is suspended by cord and counterbalance from above, or can be held in hand only.

This metal bar takes nearly all the force used in condensing, and holds the tooth rigid to make the force applied more effective.

The necessity of solid gold fillings to anchor bridges, brings the operator up to a higher standard of well-anchored and solid gold fillings for all his work.

I have for your inspection in addition to the eighteen year old bridge, two temporary porcelain bridges of four front teeth each worn three years, and replaced by permanent bridges with gum to restore absorption; these bridges were cut out from their filling attachments, having served their time and purpose well, having been inserted immediately after the loss of the teeth by accidents.

There is also one model with tooth on natural root, of porcelain crown and platina-cap baked on crown as described for crowns and bridge attachments.

The platino-iridium plate struck up ready to make bridge, (in the box of specimens), illustrates its great stiffness if you try

to bend it with your fingers, showing the addition of strength it gives to the porcelain.

The four front teeth with gum illustrate the improved porcelain bridge as anchored in pulpless teeth with fillings.

The central incisor bridge shows anchorage at one end of bar in living tooth, other in pulpless tooth. The old style of bicuspid bridge shows bar extending into second bicuspid only, several like cases having been doing well for seven years.

PROCEEDINGS OF SOCIETIES.

ILLINOIS STATE DENTAL SOCIETY.

Discussion of Dr. Black's paper, on "The Interproximate Spaces" (*see page 441*).

DR. C. N. JOHNSON, in opening the discussion of this paper, said: Mr. President and gentlemen, I regret exceedingly the circumstances which rendered it necessary to defer the discussion on Dr. Black's paper from one session to another. Those circumstances however could not be avoided. I am especially interested in having a good rousing discussion of this subject, as it is certainly one that deserves it even if we had not the incentive of a good paper upon it. The paper itself deserves our highest commendation, and if I can only succeed in getting the Society into the same mood they were in last night at the end of the reading of the paper, I am sure we will have a good discussion.

In one place the essayist made mention of the fact that it seemed to be necessary to repeat any teaching or theory a number of times in order to secure its adoption by the profession. That is true for two principal reasons. One is that the majority of the profession do not study carefully enough the papers read before societies and published in the dental journals. Another is, that a great many of us in the profession have that unfortunate element of conservatism which argues against the adoption of new ideas. This leads us into following grooves or ruts; in other words, we are routinists. Some of us appear to be confirmed routinists.

Now in regard to the form of the interproximate space. The essayist said it was not always advisable to follow the original form. I desire to emphasize that fact. We have too long been

contouring teeth to the original form irrespective of whether that form was the best or not. I was taught that as a student. The original form is not always the best. Even where the teeth themselves are of good form, their unfortunate arrangement in the arch often results in three or four very badly formed interproximate spaces. The point I wish to make is this, that in every case we should operate with a view to producing a good form irrespective of what the original form was.

In regard to the contact point it seems to me the essayist has brought that out more clearly than we have ever seen it in any paper on the subject. As he says, the best contact point, other things being equal is the small one. A broad contact point will hold fragments of food tightly between the teeth. If we make proper contact and bevel our fillings well away from it, it will protect the interproximate space and food will not wedge between.

Another point the essayist called particular attention to is the liability to proximate decay in young patients where the festoon of the gum was prominent. He mentioned particularly the natural form of gum septum which is in the shape of an arch between the teeth. I was pleased to hear him emphasize the necessity of retaining that arched condition of the gum-septum. This condition is interfered with the moment we have large festoons. It inverts the arch to have an enlarged festoon. In cases of proximate decay where it is necessary to place gutta-percha between teeth as a temporary stopping, sealing in medicine, I have been in the habit for the past two or three years of carrying my gutta-percha over the festoon, keeping it down so as to preserve this arched form. If the gutta-percha were merely crowded between the teeth so as to expose the cavity along its cervical outline, it would leave an inverted arch to the septum, and in these cases the food remains and is packed into the inverted arch so that the space is not kept clean. Where the festoon is pressed well down, it preserves the arched form, and the food, instead of lodging in the depression, slides off on either side and the space is kept clean in that way.

Reference was made in the paper to the articles in the *Dental Cosmos*, mentioned in the report of the Committee on Dental Science and Literature, and I have been requested to say something about them. I shall not say very much, however, but I want to say one thing that bears strictly on this subject. In one of these articles the author advocates a broad contact point, if I understand his teaching. We

have had here an illustration, both in the arguments used in the paper and by the specimens Dr. Black has passed around, of the evil effects of making a broad contact point. But it would not be fair to the writer for me to attempt to discuss in detail all of his teachings in a short discussion of this kind. He has taught some good things. I can hardly say he has taught them, but I will say he has said some good things. I believe that many of the best points in these articles have been published *without being copyrighted* long before the articles in question were ever written.

Injury to the gum septum. Ever since Dr. Black's first article I have been watching the condition of the gum filling the interproximate space, and have avoided as much as possible the laceration of the gum tissues in finishing or putting in a filling. It is my experience that gum tissue, when it is lacerated by a saw, file or disc, does not heal nicely and does not revert to its original healthfulness so readily as it does when it is pressed back to avoid laceration. I would rather go to the extreme of inserting gutta-percha previous to operating and pressing the gum well back from the margin of the cavity, than to leave the gum *in situ* and run the risk of lacerating it in filling. The reason is this: I have found ordinarily that where I keep the gum back out of the way and avoid lacerating it, it will creep up into place again and remain healthy, if the contact is perfect and the space is properly formed.

In regard to the material used for these temporary stoppings; instead of using base plate gutta-percha as is almost universally used, I employ softer gutta-percha, such as Gilbert's temporary stopping. It can be molded with less heat and pressure, and works more kindly in my hands.

I want to add a word sustaining Dr. Black in his condemnation of cotton and sandarac as an agent for sealing cavities temporarily. If one is accustomed to the use of gutta-percha he can seal cavities in my opinion just as rapidly with it as with cotton and sandarac, and the cavity will be more perfectly sealed and the dressing less offensive on removal.

Now as to the methods of trimming fillings. We may all agree I hope as to the form that it is proper to give the interproximate space, but probably few will agree as to the best means to be employed in trimming fillings to preserve this space. Dr. Black has mentioned the saw and file, and he condemns discs for fear of destroying the contact point. In my hands I cannot accomplish

nearly so much with the saw and file as I can with discs or strips. I can employ the latter to better advantage and give a more desirable contour to a filling. This question of instrumentation is largely a matter of individual preference. I have no quarrel with the instrument that any operator uses so long as he accomplishes the result. The instrument with which he succeeds is the one for him to use. I can conceive however that there are instruments which cannot be made serviceable in these cases. For instance, the stiff separating file. I do not know how an operator can round these fillings with a separating file. A disc is a useful thing, and if used intelligently can be made to round a filling in the proper place without cutting down the prominence forming the contact point. In the first place, you must have a fine, thin disc, and then that disc must be smeared with some lubricant. I use vaseline and a great deal of it, and by it the disc is rendered so pliable that it may be pressed to place with an instrument so as to cut exactly where you wish and at no other point. We should be cautious and watch the contact point and not trim it away. I have tried the other way, but to me the disc and strip are the most effective means for trimming proximate fillings in the majority of cases.

I want to say one word of caution, in closing, and that is this, that there are two principal things to be considered in the insertion of proximate fillings. One is the anchorage of the filling in such a way that the walls will not be broken down or the fillings forced out. If we pay particular attention to this one thing of preserving the interproximate space and lose sight of the other fact, we are going to have a crop of failures. If we build these fillings out with a table-like occluding surface we are going to invite failure on account of the leverage of the opposing tooth, so that we must bear in mind, not only the preservation of the interproximate space, but the proper beveling of the occluding surface of our fillings when the leverage is so great that in all probability the filling might be broken away.

I hope this paper will elicit a good and free discussion.

DR. G. J. DENNIS: The paper of Dr. Black has interested me greatly. I had read several papers written by Dr. Black and Dr. Johnson, which came in just at the time I was working on a case of my own. It took me some time to complete it, and these papers were in line with the idea I had in my own mind. I subsequently wrote a paper upon the subject and described the case, and the

paper was published in the November, 1891, number (p. 838) of THE DENTAL REVIEW. I made some points in connection with the gum and its relation to the teeth and to the space. Dr. Black has described it thoroughly in his paper, but at the same time it seems to me that a few diagrams on the blackboard would bring it out still more thoroughly.

(Here Dr. Dennis illustrated his remarks on the blackboard.)

In regard to laceration, the same thing is true of the gingival arch as of any part of the body. If you lacerate it you have a cicatrix formed, there is more or less shrinkage, and we have, of course, an imperfect reproduction tissue. It will not return to its original normal condition, though it will bear a certain amount of laceration, if the space is properly preserved. A great deal of laceration, however, causes an extensive cicatrix and the destruction of the gingival arch.

In completing contour fillings I have invariably brought the two surfaces together before finishing, then used thin, fine cutting strips, finishing the cervical border first, and bringing them gradually down to the surface, and I have never been able to use a disc of any kind between the teeth in making a perfectly contoured surface.

DR. J. N. CROUSE: Like all the members of the society, I also was pleased with the paper of Dr. Black, as well as with the discussion, but thus far the most difficult part of the problem has not been touched upon; I refer to the cases where some one has extracted one or both first permanent lower molars in early life, and the teeth are tilted forward, so that we have a wedge forcing itself between the upper teeth and displacing them, resulting in their separation. Shall we contour to the extent of a full form? These are the cases that I wish some one to tell me how to manage. If there is any rule, I wish to learn it. In my practice the most difficult thing I have to do is to know what is to be done with each particular case, and if there is any rule that can be laid down by which I can be governed, I would like to be familiar with it. Even with the aid of my assistants in the examinations we make, we find it one of the most difficult problems in dentistry to decide how to take care of the proximal surfaces. The warning would be, first, to be careful what teeth we extract in early life, endeavor to keep the arch perfect in the cases of children as they come to us, and keep each tooth in proper position as it comes into the arch, the upper teeth upon the lower.

There is not nearly the necessity for the Arthur disc that there formerly was. I have very little or no use for it except in contouring teeth so that I can get between them with a sandpaper disc, I know of nothing that in my hands has been so useful, or with which I can accomplish the purpose so well, as with the sand paper disc. I do not wish any varnish on it. See that the discs are pliable, then with cosmoline they become flexible, but they do not cut any better by using a greater amount of force. My assistant, with a little instrument held against it, turns the disc to the exact point where I wish it to cut. It might be well to utter a word of caution here with reference to the matter of holding the disc tightly against the tooth and running the engine rapidly, thus heating the tooth. Many of the pulps of teeth are injured by holding the disc to a tooth until it is hot. The disc does not cut any better. Another point is with reference to the matter of getting space. In my hands, I would not know how to practice dentistry without some of the forms of separators. We have the Perry and the Parr separators, and I know of no instrument that saves me so much annoyance as one of these separators.

Reference was made in the paper of that class of cases where the teeth have been filed apart and driven together by coming in contact with the lower teeth, it was advocated that they should be wedged apart and contoured to the original shape. Dr. Black did not say at what age this was done. If he can take these cases and wedge the teeth to their original position, and contour them to their original shape, he is more fortunate than I have been, if he has succeeded in making a good chewing apparatus for the patient. Some patients will be exceedingly annoyed. I have several cases where I had to remove part of the contour and allow the teeth to return, partially at least, to the point where I tried to commence to remedy the form. There must be two things remembered, one to keep the point of contact, the other is to put in the filling so that the walls will not be destroyed by the force of mastication on the gold of which it has been built. Another thing is to keep the chewing apparatus in a condition so that the patient can masticate food properly and with comfort. The greatest use of teeth is to masticate food, and if we do not keep this in mind in our operations we lose sight of an important factor. Sometimes in contouring teeth, where we have contact and have done the best we could, it is not comfortable to the patient. I have tried the practice of filling these

with oxychloride of zinc and tried one shape and another to get a shape that is comfortable to the patient.

I would like to mention one point that was not dwelt upon in the paper, and that is in regard to the care of the teeth after they are contoured. The patient should be instructed to take care of these proximal surfaces, and unless he does so and follows our instructions it is hardly necessary for us to spend our time in filling and fixing them. I care not what the condition of the proximal surfaces may be, if patients do not do their part, failure follows. The first education of a child after leaving the kindergarten should be, how to take care of the teeth. When children come to me with their teeth in a bad condition, I talk to them and try to impress upon their minds the importance of cleaning and caring for their teeth, if I cannot do otherwise, I make them brush their teeth, and when a boy comes to me for treatment I resort to that kind of stratagem, and often say, "you go home and brush your teeth or I will not do any work for you." By doing this these patients become a little more interested.

DR. C. A. KITCHEN: I am reminded of a story regarding the effect on patients in trying to make them care for their teeth, and especially with children. I had a little boy whose mother was quite anxious for me to make an impression upon him in this regard. I attended to his teeth and told him I wanted to see him in a few months. He came back and I saw by all appearances that he had neglected to keep them clean. I told him that he ought to clean his teeth at least once a day, and he said, "What! *every day*? Why, I thought once a week was *bad enough*!" I mention this to show that it is not always an easy matter to change children from negligent habits, and to convince them of the importance of regular and daily attention.

DR. MORRISON, St. Louis: With regard to the care of the interproximate space, I just wish to refer to the latter part of Dr. Crouse's remarks. We go through the same thing year after year making these fillings on the proximal surfaces, and the patients come back again with the fillings loose, and the last state is worse than the first in a good many cases. Now, it is our duty, as Dr. Crouse has said, first to educate these people and keep on doing it day after day, and if patients will do their duty in this matter it will not be necessary for us to make such heroic operations in these trying positions. I seldom use a piece of dam for any of my

patrons but that I take the piece that comes from their mouths and tell them to cut it into strips or bands to be used for cleansing the interproximate spaces carried high enough to cleanse the mesial and distal surfaces of the teeth. I instruct them to carry the rubber after it has been on that mission to the nostril and see if there is any odor perceptible, and that so long as there is, their teeth are in danger.

With regard to the use of the brush. How many of the dentists in this room take these little ones that comes to us, and teach them to use a toothbrush. There are a few of us who do. It has been my habit for thirty years to educate each individual as though it were the first time to them in regard to the care of their teeth.

As to the forms of brushes, we do not want them too large. We should use a brush with the bristles being carried downward upon the upper teeth and forcing through both from without and within. I think we as missionaries should devote more attention to this matter as the best service we can do. In filling, the best we can do is to bring the teeth to as nearly the original form as possible, keeping the space of contact well toward the coronal end of the teeth and as far from the gum as possible.

DR. P. J. KESTER: The discussion has now touched upon a very essential point, that is, the care of the interproximate space, and Dr. Morrison has briefly dwelt upon one of the most frequent causes of destruction of the gum in the interdental space. I refer to the use of the toothpick. I am surprised that gentlemen of this profession will insist upon using an instrument which is bound to destroy that which Dr. Black has so beautifully demonstrated to us and which he told us was one of the necessary things to save. I refer to the use of the toothpick, especially to that abomination of all others—the wooden toothpick. Gentlemen come from a dining room, they step up to the desk and provide themselves with wooden toothpicks which injure the gum. I believe a large majority of failures at that point are due to the injudicious use of the toothpick, rather than a lack of care. The teeth will be preserved much longer in the interproximate space if no toothpick is used. Dr. Morrison has told us how the interproximate space may be cleansed and kept clean by pieces of rubber dam. I believe that with a piece of rubber dam or, what is more convenient to the patient, the ordinary little rubber bands which are put up in

packages and can be carried in the pocket, this space can be kept clean without injuring the gum. This is an important matter.

DR. J. W. CORMANY: I presume there are a great many people who do not know how to make a toothpick out of an ordinary quill, such as we get in any of the stores. Cut one end down and scrape with the knife to a slender, smooth pick that will pass between the teeth anywhere.

DR. C. R. TAYLOR: I desire to call attention to this one point, that a dentist can tell a hotel boarder who uses a wooden toothpick as soon as he looks in his mouth. Instead of having a festooned gum, he has one that is flat like the toothpick.

How to make strips for finishing fillings? Those on the market are not formed so as to prevent laceration of the gum tissue when finishing proximal fillings. If you will cut strips like this (illustrating), narrower at one end than the other, then draw from the direction of the narrow end, you will be drawing it against the gum all the time, while by drawing from the larger end it is drawn from the gum.

Dr. Black said that teeth of the worst form are most liable to decay. Now I think that statement ought to be modified by adding "everything else being equal." The cuboidal teeth with flat proximal surfaces are the best organized teeth we see and those with which we have the most difficulty in preserving the interproximate spaces. But as a rule they are the best constructed and are least subject to decay, excepting what their shape helps to produce.

DR. BLACK: Teeth of cuboidal form are the worst we have.

DR. TAYLOR: Nature in the formation of teeth has never anticipated decay. If she has done so, she has made many mistakes. An ideal tooth, so far as the interproximate space is concerned, is one which has a bell-shaped crown. Usually, however, that form does not go with material of the best quality. Very poorly organized teeth of square or cuboidal form, with surfaces coming in contact from the grinding surfaces to the cervical border, would be most liable to decay of any kind we could have.

DR. G. D. SITHERWOOD: I think the point brought out with reference to educating patients in the matter of cleanliness and the care of their teeth is very important. I have had considerable success in this regard myself. But I would like to know how any dentist can expect to have much influence in educating his patients

in the care of their teeth who uses tobacco in any form himself. I say this in all sincerity. If we are educators, if we expect people who come to our offices to take care of their teeth properly and give them proper teaching, we must set the example. I say this with no reflection on any gentleman present, but to my mind tobacco belongs to a semibarbaric age, not to the latter part of the nineteenth century. It belongs to the Indians.

DR. T. W. BROPHY: I have been very much interested this afternoon in listening to the discussion on Dr. Black's paper, and and I desire to begin where the discussion has ended, that is, with reference to the undercuts at the base of proximal cavities for the retention of fillings. I do not regard it necessary to make undercuts or retaining pits at these points. The first duty of the dentist in the preparation of a cavity at this point is to make it square so that he can place his gold in and make it fast without retaining pits, for undercuts and retaining pits in a large percentage of cases endanger the vitality of the tooth pulp, hence they should not be resorted to. The place to retain a filling is at the point where the greatest strain comes, that is upon its masticating surface. If we retain it there, we need have no fear of it being displaced.

One word with reference to the strips that have been mentioned. I like very much the suggestion made by Dr. Taylor to have them taper and draw from the broad end toward the pointed end. My experience with strips was not satisfactory until I succeeded in getting those manufactured by Dr. Howard. They are made upon fine silk, exceedingly thin, and cut with a degree of satisfaction that I have not found in others. They are not only thin and nicely made, but are very strong. They may be used until they are worn out without breaking them. The average strip we get is so thick that it is almost impossible to place it between teeth, and besides it is so exceedingly brittle.

With sandpaper and crocus discs I have had much satisfaction in finishing proximal fillings; also in the preparation of cavities, polishing the margins with them, especially where the walls are thin and need to be cut down; and in forming them we can make use of the sandpaper, then polishing with a crocus disc, finally preparing the cavity for the reception of the gold. After filling the cavity and contouring it properly, there is no way that I can so satisfactorily finish the gold as with a disc, in order not to destroy the results of the labor performed in produc-

ing the contour, it is necessary to use a lubricant. That is a point I have attempted to force upon my friends for a long time, the necessity of using a lubricant in finishing a filling; whether we use a finishing bur, a stone, a disc, a strip, or whatnot; there is no lubricant better than vaseline or cosmoline, this can be kept at hand, taking a little from the bottle, placing it upon the slab, and using what we need. The slab should be washed, that we have something that is absolutely clean, and instead of putting a bur in the jar, remove the quantity required from the jar, keeping the jar's contents clean, that the virus of some disease may not be carried to other patients, and thereby set up infection.

The disc should be of a small size and there will not be danger of destroying the contour. Take the disc, carrying it half way round the tooth from the buccal surface, then carry it round on the lingual side and it leaves the surface beautifully contoured. If we take a large sandpaper disc and carry it straight through, and use force, it will destroy the contour. I do not know why such a disc should be employed. These little, fine discs, made of cuttle fish and crocus, are especially desirable in giving it a final finish. When the disc is put on the tooth lubricated it will make as fine a finish as any one would desire. Stones and burs ought all to be lubricated before they are used. What an unwise procedure it would be if a worker in iron were to take a drill and revolve it rapidly on a piece of metal without first lubricating it. It would become red-hot. The heat generated by the use of our finishing appliances leads to the destruction of pulps far more frequently than we anticipate, for that reason burs should be lubricated and this generation of heat avoided by the use of a lubricant, using good judgment not to revolve the bur so rapidly, or keep it in contact with the metal so as to generate that heat. It is the most disagreeable sensation in the whole experience of filling teeth, to have a dry bur cut gold while revolving rapidly. It is an experience that patients dread more than all other experiences.

The rubber dam can be kept in place until the filling is finished, when it can be taken off, then the operator should examine the masticating surface and determine whether it is necessary to remove more of the gold to secure perfect occlusion. The proximal surface should be finished before the rubber dam is removed. If that is done, the operator will not endanger the gum tissue in finishing the filling.

Cutting away portions of frail teeth is a necessity oftentimes, but by contouring them as they should be we will restore the teeth to that condition which has been mentioned by Dr. Crouse, securing for the patient a good masticating apparatus. The function of the dentist is not only to stop the decay from progressing, but to supply the patient with something that will enable him to masticate his food well. That must be always kept in mind. If I have succeeded in impressing upon those members of the profession who have neglected the matter of lubricating their finishing appliances, the value of so doing, I think that they will find it of great advantage to themselves, and their patients will appreciate it.

DR. H. A. COSTNER: I think sometimes that the gingival margin is destroyed by want of a toothpick rather than by the use of it. We find people with natural separations of the teeth, where the teeth have been lost or extracted, and it is in those cases where the inverted arch is found. Where you find these people coming into your office you generally find the cause of these inverted arches always there. There is a state in which decomposition is taking place. That is one point, we should be particular in instructing patients as to the use of a toothpick, to use it judiciously and correctly. I would like to ask Dr. Black what he says to his patients, when they say, "Doctor, I want you to fix those teeth so that I can pick between them."

DR. BLACK: I generally tell such patients that I will fix their teeth so that they won't need to pick between them. Besides the subject I introduced was not the picking of teeth. The members who have taken part in the discussion have drifted away from the important points of the paper.

DR. J. N. CROUSE: I want to speak of an important point that I neglected to mention in my previous remarks, the greatest number of failures occur, because we are not sure that we have found all of the points of destruction on the proximal surfaces. For instance, we make an examination, find a simple proximal cavity, and we may go so far as to fill it, when we come to finish it and have space enough to finish it, we find a white streak running along the gingival margin—the most vulnerable point of the operation. Here is the point where skill comes in, and if we notice this defect it should be attended to with the greatest amount of diligence.

In speaking of files, a file has been recently introduced into the

profession by Merriam, of Salem, Mass., which curves and has a thick upper edge. It is not as delicately made as it ought to be. It works well, and if you have a considerable amount of gold to cut away it does it better than anything I know of.

DR. W. A. STEVENS made some remarks on Dr. Black's paper and illustrated them on the blackboard.

Continuing he said: I cannot see from a mechanical point of view why the fillings in the interproximate space should be oval, if I understood the remarks of Dr. Black and others correctly. Why are they not just as well perfectly straight, with square, broad contact?

Dr. Black, in closing the discussion, said: Mr. President, I will only say a few words. I must confess a little disappointment at the turn that the discussion has taken. I had hoped that the subject of the paper would be discussed more fully. It is true that I mentioned the use of discs only to condemn them, and I still think with good reason. Now, it is a fact that instrumentation is largely personal, and I do not wish in anywise to endeavor to eliminate that personal equation. We cannot do it. I have seen Dr. Johnson use discs, and know he uses them well. I have seen other gentlemen use discs and I know they use them well. But I have seen a great many use discs to the detriment of their patients. I think I am perfectly safe in stating that nine tenths of the persons who use discs between the teeth are doing injury. It is not an instrument that can be successfully used in this position by the general operator. A few individuals may succeed in doing it, and do it well, and not inflict injury, but the majority of dentists will not succeed in doing it without doing injury. They will cut away the contact point and injure the forms of their fillings; therefore I think I am right in condemning the use of the disc between the teeth. There are other modes of operating upon these surfaces, of trimming fillings, that are not liable to these objections, and by which the fillings can be finished just as quickly, and a little quicker, namely, by the use of the saws and files I have shown. I have used this particular plan of manipulation for a long time and have attained facility in its use. No man can use them with facility at first.

There are several points that have been well discussed. I was particularly pleased with what Dr. Dennis said in regard to the gum not filling the space. There are a great many cases in which

the gum does not fill the spaces. The original form of the gum, however, is a complete filling of the space; it comes clear up to the contact point and the margin of the gum tissue is so sharp that you can hardly see it without the aid of a microscope. Of course, we have a great many cases where the teeth have been removed and contact destroyed between those that remain, the teeth leaning over here and there. I did not discuss that phase of the subject in my paper; there were a great many other things that I did not touch upon. I did not try to cover the whole field of dentistry.

In regard to the point of wedging in those patients who have gone on for years (persons 50 years old) with the teeth all filed apart. I have detailed plans of dealing with them in a previous paper, and it can be done. It cannot be done in a week, but it can be done by taking sufficient time, and they can be made comfortable and serviceable.

Broad contacts. I have studied the matter of broad contacts a good deal. I have made them myself, and I have never seen a broad contact yet that served the purpose as well.

You cannot build in a filling so close to a neighboring tooth that food will not be sometimes crowded in. A broad contact holds it there, and the only thing to be done is to be continually cleaning it out with a toothpick, and generally this is not successful for many years. This is all I intend to say about toothpicks. What I talked about in my paper was the natural processes of cleaning, not the toothpick process. That is another subject. Many of the specimens shown were neglected interproximate spaces. How neglected? Neglected by the patient? Yes, neglected to apply to the dentist, and neglected by the dentist. They are flattened proximate contacts where we get these decays at the cervical margin, whether the decays are at the cervical margin of fillings, or whether they are decays *de novo*, and a large proportion of them are at the cervical margins of fillings that the dentist has left with flattened contacts. Take this home and study it in connection with this paper; as your patients come to you study it carefully, and in the future tell me if you do not find that it is correct.

Now, gentlemen, in concluding this discussion, I must say that I could not reasonably expect that this paper would be fully understood at a single reading. It would require time for even as intelligent a body of men as this to fully understand it. There are reasons lying back of it which make it necessary that much time

be given to a study of the forms of the teeth before this subject can be fully appreciated. The habit of the profession in regard to the treatment of the interproximate spaces, and the proximate forms formed in their operations have been such that it will require much time for a full appreciation of well-rounded contacts in maintaining cleanliness.

Indeed, it involves a long and careful study of tooth forms, and the objects to be subserved by the particular adaptation of forms to uses, to come to an understanding of this subject. This study has not been followed by the dental profession in the past. Speaking of this being an old chestnut, gentlemen it is not an old chestnut. The first approach to a discussion of this subject was the paper of Dr. Perry in which he advocated the knuckling of teeth, but in this it was still the contouring of a tooth rather than the contouring of the space. The contouring of the space is only beginning to be studied, and the particular forms of contour of the distal and mesial surfaces of the teeth is only beginning to be studied with reference to maintaining cleanliness. I say take these matters home with you, study this paper; but above all, study the forms of the teeth themselves. How many of you have a dozen good tooth forms in your offices as objects of study, and which you can look at occasionally. I would like all those who have such to raise their hand. (Only a dozen lifted their hands). If you will understand tooth forms you must have these teeth and you must study them. I do not care how old you are you will not learn them by operating on teeth in the mouth. I asked a gentleman, who is as intelligent a man as we have in the profession, not long ago, to tell me the difference between a lower first, and lower second molar, that is, the radical difference between these teeth. He could not do it. I am in earnest in this matter of the study of tooth forms with reference particularly to the conservation of their functions and the conservation of their health.

Discussion of Dr. Cormany's paper on "Some Needed Reforms in the Practice of Dentistry" (*see page 454*).

DR. WILLIAM CONRAD: In opening this discussion I will say that the gentleman's paper was very practical, although not what I had expected from the subject, "Some Needed Reforms in the Practice of Dentistry." In connection with the first "reform" mentioned he says there are dental colleges whose faculties make it

a point to impress upon their students, that their college is the only one teaching "the latest improved methods in the practice of dentistry." Now, if the gentleman has made the charge in good faith and there are such colleges, I for one would like to know them. Yet it is but natural that this should be so when the Mr. Professor claims his work is purely a labor of love. Neither can we blame the graduates of such institutions for going forth impressed with the idea that they have had a very superior class of instructors, much above the ordinary practitioner of dentistry.

The second "reform."—In reference to filling proximal cavities of anterior teeth from the lingual surface. Judging from the gentleman's remarks, I would suppose he considers it an impossibility. It is largely a matter of experience. I have had the pleasure of seeing many teeth filled in this manner, and well filled. Of course we all recognize that plenty of room is desirable, especially in order to save the appearance of the anterior surface of the tooth, therefore I would always separate the teeth—freely—by wedging.

Third "reform."—Referring to the filling of proximal cavities in bicuspid and molars with amalgam. I do not know of any one who has received instructions in the "latest improved methods in the practice of dentistry" who would fill teeth as he says he has seen them. There are none on our side of the river I am sure. If he is certain this is the practice in Illinois, I am sorry for you, and I can only attribute it to an overproduction in dental college talent, due to active dental college competition.

The fourth "reform."—The substituting of gold crowns for large contour fillings. I certainly cannot agree with the gentleman. I think any tooth that can be filled with a fair likelihood of its remaining useful is in a much better condition than a crowned tooth. With me any crown is a last resort.

The fifth "reform."—Extracting roots or teeth in order to bridge the space. In this connection the essayist thanked the president for the comfort he had experienced in the last few years, from an operation in his own mouth. This is just the class of cases where I would condemn the practice of cutting off or extracting teeth. In this case, as I understand it, the second molar badly decayed, the first molar gone. The second molar was extracted and space bridged from the third molar to the bicuspid. It was not necessary to extract the molar. A wisdom tooth can in no case take the place of a good second molar root for anchorage.

If the roots of the second molar were in a much worse condition than he describes, I would use it as part of the anchorage for the bridge. I would not extract under any circumstances. I do not believe it is good practice, in fact, I consider it very bad practice. I hope it is not universal in this State.

With reference to crown and bridge work, referred to by the essayist, I will say that these four things should be considered in all cases—cleanliness, appearance, durability and usefulness. I look upon bridge work, so far as I have been able to observe it, as much more cleanly, better in appearance, much more durable and useful than any other class of work we have as a substitute for the natural teeth. So far as caps, half caps, full gold crowns, open face and porcelain face crowns are concerned, I think they all have their place. The gentleman speaks of caps as if they were something to be avoided. He advocates in all cases a band under the gum. I do not think it is always necessary to extend the band so far. All the forms he has mentioned have their place and it requires judgment on our part to know where to use them. If we use a cap in the place of a full gold crown by mistake, it is a very bad one. If we use a gold crown when it should be a porcelain faced crown, it shows bad judgment. We should understand where to draw the line and where to use these different forms. I will say this, the most durable crown is the all gold crown; the most beautiful, the porcelain faced. In my practice I never have any use for an all porcelain crown. I do not believe they are safe, and they are only used by dentists on account of the ease with which they can be adjusted and the cheapness to the patient.

“Reform” No. seven.—The essayist thinks it is better in most cases to leave the pulps alive in teeth where they are crowned for bridge work. In preparing a live tooth for a crown to support a bridge, there is in most cases considerable grinding to be done, and we should take into consideration the pain it causes the patient, but if it is a proper practice, the pain caused the patient should not enter into the question. If the pulp in a tooth is a necessity, it should remain there and I would not take it out, but it has been my experience that in dressing a tooth sufficiently to make a cap or a crown fit properly, the pulp is always irritated. Irritation of the pulp produces calcification, and calcification of a pulp means the commencement of death. This occurs where teeth have been crowned, more especially where crowned to support

bridges, owing to strain brought upon them. You will often wish you had devitalized the tooth at once and properly filled the roots. I have paid the price, gentlemen, and I speak from experience.

Under the head of "Reform" number eight he refers to a dentist who said he was busy, working from daylight until dark, mostly operating, and had as assistants in this great practice two automatic mallets. Now, gentlemen, we have a great many dentists who seem to delight in parading before the community, and especially to their patients, the fact that they are "worked to death," working from daylight until dark, with no time for their lunch—the demand upon their time so great it becomes utterly impossible for them to take the proper care of themselves. I do not think any good dentist ever works from daylight to dark as a rule; certainly he could not remain good very long. After a certain time in the day, when the dentist becomes tired, any patient who applies to him for his best service never gets it, and any dentist who does not give all his patients his best service robs them.

The tenth "Reform" refers to dentists who have practiced twenty years, not being able to get the good things of life—I believe most dentists are satisfied. They live well and have a few dollars to spend among the boys.

Eleventh "Reform." He offers to guarantee to any dentist who will invest \$100 in machinery perfect satisfaction. I know men who have spent several \$100, who never had a particle of satisfaction. With me the greatest satisfaction is electricity as a motor power. The Edison Electric Motor and outfit has the power, and any gentleman who can get the alternating current will never have any trouble with it; the motor will pay for itself in an average practice every month. I have been running one about nine months at an average expense of one dollar per month.

In conclusion I wish to say that any dentist who has so far succeeded in educating his patients as to the care of the natural teeth and impressed upon their minds that the loss of a tooth is one that can never be repaired, has done a good work. I do not think any dentist has succeeded in educating a community to care for the natural teeth as they should. I doubt if dentists as a class know how to take care of their own teeth properly. There are at present too many testimonials given of secret preparations.

THE PRESIDENT: In defense of my own method, I desire to

state that Dr. Cormany has drawn on his vivid imagination. The molar was not extracted at my suggestion. I found it missing.

DR. W. A. STEVENS: I have one particular objection to Dr. Cormany's paper, and that is the advocacy of bridge work. I think bridge work is a good deal of a fad which of itself is going to die out like a great many other fads that have been introduced into the dental profession during the past twenty years. Of the large number of bridges I have seen, nearly ninety per cent are failures. I wish I had brought a specimen here of bridge work to show which cost a man \$400, and he suffered the tortures of purgatory in wearing it for four years. Dentists crown a great many teeth that are in no condition to be crowned. They are in the condition of the patient who sent for an old physician in the town of York. The physician after examining him carefully said, "Why did you send for me when you have one foot in the grave and the other has no business out?" That is the condition of the great majority of teeth to which crown and bridge work is attached.

A lady patient was brought to my office who said she had been recommended to have certain roots crowned and bridge work attached. Judging from the condition of her mouth I should say she had been salivated. There was not a tooth or root that was solid. I did not believe her teeth or the roots could be restored to anything like a normal condition again. My advice was to take every one out and put in teeth on plates.

Now as to cleanliness. I never saw a bridge that was cleanly yet. I believe there are cases that can be properly crowned, but to crown every root that comes along is absurd. I believe a plate can be kept cleaner than any bridge work. From my own observation I prefer a plate to a bridge; as a general rule a bridge is a constant source of irritation. I realize the fact that the majority of the profession do not agree with me.

DR. MCKELLOPS: I was very much interested in the paper just read, and it is, in my estimation, a paper that the author should feel proud of. I am actually astonished in this enlightened age and with the brains we have in this society to hear gentlemen make such remarks among those who pride themselves on being professional experts in "crown" and "bridge" work.

I travel over this country a great deal, and I have seen as beautiful work as any one would wish to see; work done by members of the profession, and of which they should be very proud. I would

like to ask if the surgeon is always successful when he is called to the bedside to save a patient's life? Can it be expected that every bridge put in a patient's mouth should be a success, or that every man who tries to put it in should be an artist? We are all bound to make failures. Where is the man that makes a piece of artificial work that does not fail some time? We have failures all through life. No man has perfect success in it, yet I have seen beautiful work in the mouths of patients, and as clean as possible.

I may not be successful in doing this work because it is beyond my time. I must have some one who has a steadier hand than mine to do this kind of work. As far as cleanliness is concerned it is just as neat and cleanly as can be.

I saw a piece of movable bridge work in Dr. Dwinelle's mouth made by Dr. Richmond of New York, as fine a specimen of artistic and practical bridge work as I ever saw. And I also saw a piece of work done by my friend, Dr. Knapp, of New Orleans, which was a credit to him and to the profession. Therefore such work is not a failure.

It is a credit to any man to read such a paper as Dr. Cormany has read, and we ought to applaud him and appreciate the views he has advanced. In the case of Dr. Cormany, Dr. Taggart has certainly given him much comfort, and he deserves great credit for it. We are here not to cry down our profession but to elevate it. (Applause.) I do not pretend to be a little god. (Laughter.) I do not pretend to know everything. I came here to learn and I have picked up many little items to-day relating to invention by members of the profession. I like to encourage this work. I like to be here and see what is going on, take an idea home and utilize it for the benefit of my patients. The gentleman gets up and says that these patients with bridges do not keep their mouths clean. I can show him plenty of patients that keep their mouths and bridges perfectly clean. It is the dentist's duty to teach his patients how to take care of the mouth just as soon as they fall into his hands. He should also impress this upon the minds of the mothers who bring their children to him. Mothers do not instruct their children as they should, to take care of their teeth, and especially their daughters who get married and in after years bring up families.

A gentleman came into my office not long ago with a child and said, "I want you to take out a tooth for the child. I have been walking the floor all night and have not been able to sleep." I

said to him, "I cannot take that tooth out." He said, "If you do not, I will get somebody else to do it." I told him it was his privilege to do so. I then said, "Whose child is this?" "It's mine." "Who gave you this child?" "God," he answered. "What did he give it to you for?" "To raise and take care of." "Have you done your duty to it?" He replied, "For God's sake, Mack, do not say anything more. I have six children, and they will all be down here to-morrow." (Applause.)

That is what we want to do, we want to educate our patients in the matter of cleanliness, but, first of all, be cleanly ourselves. I am willing for any person to come into my office and examine everything I have. I have instruments by dozens. I am not like the man writing for the *Dental Cosmos*, who in filling teeth operates with a broken instrument and a Bonwill mallet, which he has used for a year, just the one instrument, thinks no more are necessary. He recommends young operators to have as few instruments as possible to do their work.

The idea of an artist doing a beautiful piece of work with a broken or faulty brush, or a sculptor carving out a statue with one little chisel. The young operator wants to be encouraged to use every useful instrument in his practice. I want to see a man at work in his office, then I will tell you very quickly what I think of him. Some will turn their back on you and not give you a chance to get inside.

These are the little things that I am proud of in my profession. I come here to see them, to learn, that I may show others. I take these ideas and improvements to other dental societies where I go, and they are of benefit to us all. As for crown and bridge work, I will say that it has been a God-send to the human race. Mind you, I do not believe that every man is successful in it. We all differ in regard to putting them on, and this depends upon a man's judgment and taste. I have seen teeth crowned for years and doing first-class work, giving perfect comfort and health, and what more can you have?

DR. C. R. TAYLOR: There are a number of points in Dr. Cormany's paper that should be thoroughly discussed. It is held by the best enlightened dentists of this State and all over the United States, that it is disreputable to do certain things, and a man who does them in his practice is subject to discipline by the societies of which he may be a member. I think that is all well enough,

but we ought to have a reform that will go farther and discipline men who are connected with institutions that will advertise and do disreputable things. A dentist connected with a dental college, who will do things for patronage and business for the college, should be subjected to the same kind of discipline that a member of this or any other society would be if he did the same things in connection with his private practice. This is one of the greatest reforms we need at the present time. As a man who has no interest in any dental college, I take the privilege of entering my protest against the practice mentioned.

Now in reference to gold crowns on front teeth. I would like to ask for information. How is a man going to avoid placing a half crown or cap in which gold is conspicuous, where the cutting edges of the teeth occlude; where there is large loss of tooth structure from erosion of the cutting edges of the front teeth with proximal cavities, and cavities at the cervical borders of the same? What can we better do than to put gold crowns on in these cases?

Dr. E. NOYES: I desire to say a few words, not so much in relation to the question of reform as in answer to one or two queries and suggestions, particularly the one by Dr. Taylor, and the suggestion in the paper that a good many teeth should have crowns put upon them instead of being filled. It seems to me that at the present time the danger and the need of reform lie in exactly the opposite direction. Teeth are crowned which ought to be filled. The general statement has already been made that the crowning of a tooth should be the last resort for the preservation and usefulness of its root when no other means are available. Of course, a broad statement like that is subject to exceptions, just as a broad statement on the other side might admit of instances in which it is correct; but it should be an axiom with the dentist to take into consideration the crowning of a root only after he has fully determined that a filling cannot be made useful and serviceable, for the reason that however well crowns may be put on, there is probably a limit to their service and durability. We all recognize the fact that the danger to teeth which have been crowned is that of irritation of the peridental membrane; therefore as a general principle you may say that a crowned tooth has a limit of life and usefulness. Of course, the limit varies exceedingly in different cases, and still more so by the skillfulness with which the work is done. But it cannot be said, considering in the

average work, or even the better work done by the profession, that a crowned tooth is in as good condition and as likely to remain permanently firm and free from peridental irritation as a well filled tooth under the same circumstances. That being the case, the longer you delay the time of putting on the crown, the longer the loss of the tooth is likely to be delayed.

In regard to the lower and upper incisors spoken of, it is merely a question of judgment in my mind between two plans of procedure. The cavity would determine the propriety of making a crown I should think. I do not say that it would absolutely, but it would be an important factor in the question. A person cannot stand up and say that such cases should always be filled instead of being crowned; but I will say that the first thing to consider is, whether carefully made fillings are admissible, useful, and durable for the case. If they are, you do not need to consider any further. If they are not admissible, then you have to consider whether you can put on crowns or caps that will be so. Such cases in many instances are a question of putting into use a metal surface in the place of further wearing out the natural teeth, and you put on a filling of platinized gold, or a metal cap with a view to having the patient wear the metal surface instead of the dentine surface, and you expect when he wears out the gold it will have to be replaced. Now the accuracy, the neatness, cleanliness, and appearance are all in favor of fillings as against crowns or caps, and so they should have first consideration as to their availability.

DR. SITHERWOOD: The first thing I wish to call attention to are the specimens of Dr. E. Parmly Brown, which have been passed around. There are so many methods of practice that every dentist has his own way of doing things. I wish to call attention to the two different methods that have been advocated. I understand from the crown and bridge work we have seen presented, that Dr. Brown advocates that method of putting on bridge work that will most nearly approximate or imitate nature; that there are no gold bands or anything of that kind to be seen. I confess that I have grave doubts whether I could make such a bridge that would stand the wear in the mouth, but he certainly does bridge work of that kind that wears. If it stands the wear and does the work, the appearance is much better. In some of his articles, speaking of gold bands, he refers to a needed reform "of driving a gold band on the root of a tooth the sixteenth of an inch," which, I under-

stood the essayist to say, was his practice. Just think of it! Some of you saw Dr. Crouse put on the rubber dam without a ligature. Never put a clamp on the tooth if you can get along without it. Why? Because below the gum margin there is a sensitive membrane which is so easily irritated, and you can do irreparable injury.

Dr. Conrad spoke of never putting on a crown part gold and part porcelain. I would put on a crown that is all porcelain, so that none of the gold will show if it is possible. There are cases where I admit you cannot put them on, especially if you put on a piece of bridge work that will wear. If a piece of bridge work is successful as a mechanical piece of work, it must also, from an artistic standpoint, imitate nature.

The other thing I wish to speak about is the use of the automatic mallet. I say use it or anything you can use best. I use Dr. Abbott's on account of its reverse action. I could not get along very well without it. I use hand pressure in the old-fashioned way. I use everything or anything that I find of advantage in my work. Dr. Cormany should not say, "Never use the automatic mallet."

DR. CORMANY: I do not think I used the word never. I said the automatic mallet was good in its place.

DR. A. W. HARLAN: Nearly all reforms spoken of in the paper would be considered trivial if the essayist were not in earnest. Reform is a word, used in this connection, which has the meaning of correcting an abuse in practice, in education, ethics and other questions of the greatest importance to our future welfare. The essayist has failed to touch upon the duty of every dentist to properly instruct his clients in the care of their teeth not only by demonstration, but by example. Dentists need to reform by pursuing a plan which will ensure the cleanliness of their own mouths and teeth. A needed reform is to exclude cotton or any other porous substance from the roots of teeth. Another reform that is loudly called for is the abandonment of the filing of teeth to gain space for filling. This abuse of an innocent instrument has grown to such large proportions that it calls, if not for the total exclusion of separating files, for their very limited use on the surfaces not having contact with other teeth.

A needed reform in the practice of dentistry is the more accurate fitting of bands to roots and the limitation of the adjustment of a crown as a last resort for the salvation of the tooth's root. Reform is called for in the more general practice of packing cohesive gold

slowly after it is thoroughly annealed. This will make many fillings more durable and they will for a longer time be presentable to the eye and tongue. Reform is needed in the administration of anæsthetics. A second person should always be present.

The general practice of endorsing preparations of medicine for the induction of local anæsthesia should be abandoned absolutely, and the giving of certificates for new devices, amalgams, cements, etc., should be limited to private circulation only. It is an injustice to an ignorant and innocent purchaser to recommend any article for use unless it has been tested thoroughly and the character of the manufacturer is above reproach. I might speak of other reforms needed in the practice of dentistry, but I will close with the suggestion that dentists lessen their hours of labor daily, in order to devote more time to study and recreation.

DR. CONRAD: Dr. Sitherwood misunderstood me. I said never use an all porcelain crown. Certainly a gold and porcelain crown should be put on so as not to show the gold, and in most cases this can be done.

I am sorry for the class of people Dr. Stevens seems to have coming to him, for whom ninety per cent of all cases of bridge work are failures. I presume he means those upon whom he operates himself, as well as those he sees from other dentists. It does seem to me to be a stretch of the imagination when he refers to such a large percentage of failures.

DR. STEVENS: I wish to say in reply to Dr. Conrad that first-class dentists did the work and the patients came to me afterward.

DR. CONRAD: The doctor says the work cost the patient \$400. Any dentist who gets \$400 for a single piece of bridge work must be a first-class dentist. I think any case of bridge work that has saved a person four years of plates at \$100 a year is cheap.

In the case where the doctor removed the \$400 bridge he also removed the teeth or roots. Now, if the doctor will follow the practice of treating the roots and leaving them in position, he will find it of great advantage in many ways. By retaining even a few roots in the mouth, although the patient may not care to have a bridge, there is maintained a greater permanence of the process, which permits greater length of muscle; the length of muscle causes that flexibility or expression of the face which we find is lacking in many cases where the teeth are all taken out, and the roots in the mouth, well treated, give a more securely fitting plate.

Dr. Noyes, in speaking of irritation of the peridental membrane caused by the presence of a crown, gives me to understand that he fears the loss of such crowned roots, as a result of said inflammation. In the treatment of such cases, the roots should be perfectly fitted—plenty of time taken to properly fit the band—crown articulated accurately and cemented in position. There will follow no irritation caused by the presence of the band, which will in any way effect the future comfort or usefulness of the root as a support for the crown.

Dr. J. W. CORMANY: The reason I placed water as a motor power ahead of electricity, is because we have no electric current in our city and I have no means of getting it into my office. If we had the electric current I might change my mind on the subject.

In regard to the removal of the second molars referred to in the paper, I will say that it has been done long ago; that I am now thankful to the dentist who removed them, and for the bridges that are in my mouth at the present time. They are doing good service: so far as the lives of the pulps are concerned under the crowns, I am convinced from their natural sensibility that they are still living. I have worn the bridges six years and they have not given me a particle of trouble. I desire to thank the gentlemen for their kindness in discussing my paper and speaking so favorably of it.

Discussion on the President's Address (*see page 462*).

Dr. GEORGE H. CUSHING: I do not know that there is anything to discuss in the president's address; but I want to commend it for its brevity, which is an admirable quality in a paper of that character, while to many of the suggestions that have been offered we should all give heed. That with regard to the matter of discussions which commence with bacteriology and end with the manipulation of artificial teeth, is very timely. A great deal of time is lost in desultory discussions, which we are so apt to hear.

I will say a word with regard to the question of patents. I think what he says is very just and proper. The chief objection to professional men holding patents is, I believe, simply an objection to the method in which such patents are generally placed before the public. I do not think the holding of a patent by professional men would generally be deemed objectionable, provided the patent article or articles were placed before the profession, so

that they might be purchased. It is the method of selling office rights and subjecting the profession to the espionage which it entails that is so objectionable to the profession at large.

DR. T. W. BROPHY: The subject of patents is one of those things that will regulate itself. I see no reason why a man who has the ingenuity to invent anything should (if he treats his professional brethren properly) not do so, and set forth his right or claim to an invention, and then if he pleases give it to the profession. If he does not do that, it goes into the hands of the manufacturer and he reaps the reward. I see no reason why a man, who devotes himself as a professional man to a particular thing and invents it, should not receive some reward for the outcome of his professional endeavors. If any gentleman here should invent an appliance of value to the profession, why should he not receive some remuneration for it?

Some gentlemen down East are wild on the subject of patents and are carrying it to extremes, as the President has said. If their plans are adopted and generally acceded to throughout the country, it will dwarf talent in this direction; it will remove all incentive to invention; it will be a retrograde movement rather than a progressive one.

The instruments, appliances, and improvements that have been made in dentistry within the last fifteen or twenty years have been largely due to the genius of its members. The manufacturer never invents anything. He takes the instrument or appliance that is brought by the skilled practitioner, puts it in shape and makes it. That is the way we have gotten all of the valuable appliances we use to-day. Electricity, the dental engine, excavators, pluggers, all in the hands of manufacturers, have come through dentists. He conceives that if they be formed in a different way they would be better, consequently the manufacturer takes them and pushes them, and the dentist gets little or perhaps nothing for his efforts.

DR. J. H. WOOLLEY: I think the remarks of Dr. Brophy are very timely, and it would seem to me that the subject of patents should receive some special consideration, or that we might get the concensus of opinion of dentists upon the subject. I have had a little experience in this direction myself. I had worked for fourteen years on an instrument. I had you might say, crystallized a thought and brought it into shape as far as the manufacturer of the instrument was concerned. I then applied to the patent office for

a patent on this instrument. About that time there was a good deal of discussion pro and con in regard to whether a dentist should patent instruments, and it seemed to me that the weight of opinion was against it. So I waited a while. Then I received word through my lawyer from the patent office, stating that there was a similar instrument back of mine waiting for a patent, that if word was not received the latter instrument would be patented. I concluded therefore to let the matter drop, although I had a desire to have given it to the world at a fair consideration, not in the way of a trust. I learned afterward that this instrument similar to mine was in the hands of S. S. White & Co., but patented through another party, Dr. Evans, of New York. As Dr. Brophy says, where one has toiled for years, whose aim and purpose was to benefit the profession, and feels that he would like to give something to the world, it is perfectly fair, that he should be given credit for his brain work and service.

DR. C. R. TAYLOR: I think the dental profession as a whole realize that they owe something to the men who make great inventions. The profession assented to the obligations they owe to the man who invented the rubber dam. When he died, we all in a meager way gave donations to his widow.

As Dr. Cushing has intimated, the profession is more or less to blame for the difficulty arising in reference to patents. A manufacturer said to me not long ago that the dentist accused the manufacturer of everything in regard to patents, but he said the dentist who invented "wanted the earth" with a fence around it. The profession has been bled both by the manufacturer and members of our profession, and the profession has said that "the whole thing is wrong." I think every man here will concede that our great inventions must come from the man who first feels the necessity of an invention. The manufacturer, as such, cannot know the needs of the dentist. He is not a practical operator, therefore he cannot appreciate his necessities, until the dentist has first told him what needs to be done. Then as a workman, he makes it and sells it to us. If the dentist who makes the invention would give the right of manufacture to more than one man, so there should be no monopoly but a reasonable remuneration to him for his invention, that would be proper and we would then, it seems to me, have mastered the difficulty. As a rule the man who is an inventor

and gets a hold on the profession, becomes as grasping as the manufacturer himself.

DR. H. J. McKELLOPS: I congratulate the President on his interesting address, and I desire to refer to that portion of it which alludes to the Columbian Dental Congress that we are to have in Chicago in 1893. We want every dentist in the State of Illinois and throughout this Western country to put his shoulder to the wheel, for it is going to be *the* meeting of our profession. It is going to be a meeting that every man in the profession should be proud of, and each should do his utmost in coming forward with his contributions, no matter how small the amount.

With reference to patents I heartily approve of well rewarding a man who has the genius to invent instruments and machinery for the benefit of the profession. I believe he should be protected by the profession. Edison says in the *Items of Interest*, "I have taken out two hundred patents, but I never had one moment's protection. I have never made one cent. All I have made is out of manufacturing. The companies with which I am connected have spent millions in trying to defend the patents. I have spent about six hundred thousand dollars myself and I believe I would have been six hundred thousand dollars better off had I never taken out a patent."

I want to encourage every man in the profession who has the ingenuity to invent any new appliances to bring them forward in the proper way for the benefit of the profession

Discussion on Dr. Cushing's paper entitled "Contour Fillings—what they should be" (*see page 458*).

DR. E. D. SWAIN: Mr. President I shall be brief, because the subject matter of the paper as well as the remarks I intended to make were anticipated this afternoon in the discussion upon Interdental Spaces. Many of you present remember very well that upon the advent of cohesive gold, which made those fillings possible, and later that of the rubber dam which made them easier, the great interest which all operators took in contour fillings. The entire profession almost went wild upon the subject; first because they made fillings that showed up well and the theories and reasons advanced for putting them in were excellent, or at least sounded so. But soon like most all such cases, were submitted to the judgment of the profession, and the result has been that less contour

work is done to-day than formerly for the reasons which Dr. Cushing has given you. They are almost certain failures, and with the failure of the filling a further breaking down of the tooth and its consequent loss. To make contour fillings it requires, so far as the packing of gold is concerned, no great amount of skill. If the material is kept dry, and the proper instruments are used, any man who can pack small particles of gold after it has been annealed can build it almost to any desired shape and extent. The skill required is in the preparation of the cavity and as you have been told the anchorages. Dr. Cushing has explained to you what should be done in the preparation of a cavity for the setting of the filling. He has cautioned you against lack of anchorage in the grinding surface.'

We will suppose that this is a molar tooth cut longitudinally through. He has cautioned you against anchorage at this point (illustrating) upon the grinding surface. This may be done either by cutting out the fissures in the remaining portion of the tooth, or by cutting a square groove in the dentine across the grinding surface, or by setting retaining screws. He has mentioned this point to you, and I wish to emphasize the point that if the cusps in the antagonizing teeth are left they should be sacrificed and be cut away, not cutting away too much of the filling at this point, weakening it there (illustrating). We must remember that in doing this kind of work we are using a metal which is little harder than lead and the constant impact of the other teeth in the mastication of food has a tendency to tear off whatever prominences we have built along the grooves cut in the sides of the teeth or even in the grinding surfaces. At the present day we are not so fond of building up gold in the mouth to make beautiful contour work. You had a demonstration yesterday of what may be done with inlays; in certain classes of teeth I consider this method far superior to that of malleting in the necessary amount of gold to restore the teeth to usefulness. There is an advantage in inlays over gold packed with instruments, its strength, hardness, and smoothness thereby overcoming one of the objections which Dr. Cushing mentioned, the possibility of the antagonizing tooth embedding itself, as it were, making an indent into the filling and thereby getting the whole bite which constantly tends to pull the filling away from the tooth.

There was considerable discussion upon the finishing of fillings

this afternoon, but there was one point which I did not hear mentioned and wish to speak of, which applies especially to contour fillings. In the interdental space on the mesial and distal surfaces of a tooth, of the incisors, cuspids and bicuspid especially, and often of the molars, there is often a depression at the gingival margin or interdental space, the ridges being on either side of course higher, rounded and smooth in accordance with this depression. Supposing the cavity either for a contour filling or any other extends into that depression, I contend it would be impossible to make an absolutely perfect finish at the margin of that filling with the surface of the tooth with discs, however small they were. For this kind of cases Dr. Black has given us a set of instruments in the way of knives and small files which you have seen and which answer a very excellent purpose. But, in the first place, in making these fillings they should only be made where we have plenty of room. If we have sufficient space in which to introduce the work, we have sufficient to finish it. If they are contour fillings we should have room enough to finish the contact point without difficulty.

DR. E. NOYES: In the restoration of incisor teeth æsthetic considerations of course take precedence of all others, because it would be better to make an operation that would last only a few years that would be handsome, than to make a positive disfigurement that would last three times as long. The restoration of the corner on a front tooth with gold or with platinized gold, or any of the combinations of materials which are practicable, is a disfigurement at the best. The material catches the eye more quickly and prominently than the natural tooth material. There is something about it of such quality to the eye that if the contour of a tooth is absolutely and accurately restored to its entire extent, the eye will seize upon that, and it will appear to have been over-restored and the impression to the eye will be that there is an exaggeration of contour. This is very fortunate for us. It gives an opportunity for slight sloping to the cutting edge so that the force of occlusion will come upon the remaining part of the tooth and upon the other teeth, and not quite reach the filling; it permits a slight narrowing of the tooth on its proximal side; remember, these modifications must be slight, and they must be done with good taste and good judgment, so that the shape is not disfigured and changed in its character, but only modified in its extent. A tooth may be slightly narrowed from the con-

tact point to the corner. The corner itself may be rounded the least bit more than natural, and when finished and the eyes of spectators look at it, it will appear to be as big as it ought to be. I say it is fortunate for us that æsthetic considerations and considerations of safety correspond and run parallel.

At the risk of being misunderstood, I will venture to say that I believe that sometimes, in certain cases of molars and bicuspid, to have the undercut upon the labial and lingual wall is good practice, rather than to do so much cutting in the grinding surface, and have so great a weakening of the grinding surface, angles and corners. Remember, I am not putting this forward as a general practice, but there are certain forms of teeth and certain sizes of cavities in them in which it seems to me that it is better practice. It must be remembered that the greatest strain upon the molars and bicuspid comes upon the top of them, and they are built with their greatest strength around this periphery. Of course, if the grinding surface angle has to be invaded at all it weakens the tooth materially, and in many forms of teeth it weakens it so much that it won't do to carry it any further by any lingual or labial undercuts. It is practicable to depend wholly on labial and lingual undercuts for the retention of proximal fillings in certain cases which reach slightly into the grinding surface corner instead of cutting a deep groove through the whole grinding surface.

It is not always necessary to slope fillings so much from the grinding surface to the proximal as was described in the paper, and is represented in this model. As soon as you get beyond the point where there is a perpendicular floor, then the filling should begin to slope away; but the grinding surface is better if you bite against a square surface than if you bite against one which slants. It is more efficient for the trituration of food. Sometimes you can get sufficient strength and still have greater efficiency than was described in the paper or represented in the model. These things are to be determined on two lines: (1) We must have general principles and guiding lines of practice and rules, and (2) we must notice in each individual case how well the rule fits and modify it as may be necessary under the circumstances.

DR. G. V. BLACK: Mr. President, I desire to say only a few words upon this subject. Dr. Noyes spoke of sloping fillings. I do not like to slope fillings so much as he indicated, unless there is a grave

necessity that it be done, because they make gliding motions of food that is detrimental to mastication. The seat upon which the filling rests at the cervical wall is one of the most important points in the anchorage of fillings. This seat should be a square surface sufficient to support all the crushing strain that may be brought upon the occluding surface of the filling. Then, if the other points of anchorage are sufficient to prevent the filling being toppled over, it will be secure.

Discussion on Dr. Blair's paper, entitled "Dental Legislation" (*see page 464*).

DR. C. R. E. KOCH: Mr. President, I take it that the position of dental boards, of the people, the profession and the colleges, in their relation one to another are yet so poorly understood by the average practitioner that perhaps a great deal of charity may properly be exercised toward the harsh criticism, that has from time to time been given to the practitioners who, unfortunately for themselves, have been put in charge of the execution of the dental laws in the several States.

The essayist has spoken of dental legislation in a circumscribed sense. He outlines the possible means of changing the dental law of this State. He has also presented some things that are desirable. Now, I do not propose to go into the question of what sort of a law we ought to have. If I can have your indulgence for a short time I will point out some reasons for a change of the present law, and I want to emphasize the fact that there is no necessity whatever of greater power being given to the Dental Board of the State of Illinois by any law; in fact, I think the power it possesses now is too great and ought to be circumscribed. That brings me to a consideration of the dental colleges to our profession, a very ticklish subject. I do not like to touch it, but we cannot consider the question without doing it. I am speaking to a number of gentlemen who have given a great deal of thought to the scientific growth and advancement of our profession, but who in the nature of things very rarely give a thought to this matter, because it does not seem to concern them. They are very well-to-do, and their limited time prevents a thorough and impartial study of the questions involved.

The present law has devolved upon the State Board of Illinois to settle the reputability of colleges. It is a power that has given

infinite trouble to the board, and while this board (I, myself, am still a member of it, though my resignation has long been tendered, and perhaps modesty should forbid me to say it) has always been composed of earnest, intelligent, conscientious and upright men, who fully realize that as members of the board they are not the servants of the dental profession, not the servants of the dental colleges, but the servants of the people first and foremost; yet no board that has ever existed in this State has escaped either individually or collectively the accusation or the suspicion of being a special friend and advocate of this or that college. That has been one of the main difficulties, under our law, to determine whether a certain college is reputable or not. If the board should in any case be compelled in the discharge of its duty to say a college is not reputable, then all the graduates of such a college become disqualified from receiving a license to practice in the State of Illinois, without first submitting themselves to a personal examination by the board. It is a power much greater than if the board were compelled simply to examine each individual upon his own merits, and let merit determine his right to practice among the people of this State. I have said the members of this society. I will go farther and say the mass of the profession do not give any thought to this matter whatever except at times when an effort may be made to get a change in legislation. Immediately some one springs up and imagines that there is something in a bill proposed that is to encroach upon his vested rights. I want to say parenthetically that during the history of legislation throughout this country, there has never been but one instance in which legislation affected in any manner whatever a man or woman, then practicing in their respective States, but the rights that had been gained by general consent previous to the dates of any enactments have always been protected. There has never been in this State any attempt to legislate so as to encroach upon any one's rights already obtained. All legislation has been made with a view of providing for the future, of securing for the people of the State better service. The fact that legislation has been made in this manner is an evidence that the people never desired to have the legislative assembly reflect discreditably upon the dentists that were in practice previous to these enactments. In this day of progress, however, the people desire that those who commence to practice dentistry hereafter should enter with better preparation than their

early predecessors. I think the interests of the profession, the people and the dental colleges all run in the same groove, although the practical experience of our board has been that they have worked in opposite directions and mainly through misapprehension. The thinking men who have given the matter consideration have been in such a hopeless minority, that a few designing men who believe they have personal ends to gain, have generally succeeded in defeating their efforts so far as this State is concerned, at least.

One of the faults with our present law is that there has been no well-defined method of legal proceeding in the prosecution of offenders, and in the second place there has been no revenue with which to carry on the prosecutions. It is singular that so many intelligent men should have such a fear of legislation, should have such a fear that in case the people's interests are more closely protected there is going to be personal hardship. Laws are not made for the law-abiding, they are made for the lawless.

Those are the persons we ought to be after.

The Illinois board has, in the peculiar situation in which it finds itself, probably attracted more attention than any board of its kind in the country. There have been more questions raised, there has been more work done, than in any other State. I believe that Illinois stimulated the formation of the first national organization, namely, The National Board of Dental Examiners. Perhaps you will think I am getting away from dental legislation; I will get back to it again. The object of that association was not only to use its influence in the direction that dental colleges should *educate*, but to compel dental colleges all over the land to educate on something near uniform lines. We see at present as a result, almost uniform requirements and a nearly uniform system. This was the inevitable result of the meetings of conferences between the several boards representing the several States, created by the dental legislation of the different States, and that should show you that dental legislation is a desirable thing. While Illinois has used her influence in this direction, there have at times been occurrences outside of Illinois that have somewhat worried your board.

Some time ago the Illinois board was prosecuting a case in the Supreme Court in which the board was sustained, but in which also there was a slight rebuke given the board for going outside of Illinois for information and instruction, as was intimated by some of the evidence. Your present board has carefully avoided any such

strictures on the part of the Supreme Court of this State. It has recently been stated in a certain Dental Journal that unless the Illinois board did thus or so, there would be an explosion. The Illinois State Board is responsible to Illinois and her laws and people only, and the members of said board will discharge their duties faithfully to her citizens as their consciences, under their oath of office, dictate, without fear of threats or intimidations from within or without the State. Has this dental board, created some twelve years ago in a crude form, done anything to elevate the dental profession of the State? Well, if graduates of colleges are better informed and better dentists than those who have been compelled to pick up their professional education, and I cheerfully concede they are, we must confess that dental legislation has accomplished a great deal in this State. I have not the exact figures, but I believe that when the law went into effect (1881) in this State, the proportion of graduates to nongraduates of dental colleges was twelve per cent; to-day it is over fifty per cent.

Not over ten per cent of those admitted to practice since the law went into effect are nongraduates; this notwithstanding the fact that the law permits any one to come before the board for examination.

Probably forty per cent of the applicants for examinations have been refused licenses in the past three years, because they were found unworthy.

The board has been accused of many things by professional educators, and yet I am not afraid of successful contradiction, when I say that the board, hampered as it has been, has always been in the advance in thought and action leading to better education. The statutory law says that any person can come before this board and be examined. The Supreme Court of this State decided that the board could make any reasonable rules which would comply with the law. The board decided to examine no one for license who had not had three years previous instruction, requiring of them the same amount of time now required by the colleges. This it did before the colleges established such a requirement.

The board has recently been accused of the habit of licensing junior students. I would say to you that if the Illinois board has ever done so, it did it lawfully. The law permits any one to come before the board and if he passes the examination the board is compelled to issue a license to practice. But the matter of examination of

junior students has long since been abandoned unless they can show three years of study and instruction. It was abandoned at the time the rule was adopted requiring a certain length of tuition before an examination would be given. The board has also been accused at times of licensing the plucked seniors of colleges. I presume that it may have done so. The colleges have never informed the board of their plucked students so that it might probe their specially weak points, which the board would have done had they been informed by such colleges. In this State the colleges are subject to the supervision of the board, but the law does not say that the board or its actions must meet the approval of the colleges.

The criticism has been made that the board's examination is merely theoretical. That in the main has been correct, because it was the best thing it could do under the circumstances. If we should have legislation that will provide for ample means, the examinations would never be carried on in that way alone.

Now, the essayist has outlined to you how to obtain better legislation. If I have succeeded in presenting some of the defects of our present law ; if I have succeeded in showing the benefits that shall be derived by better legislation in the public's interest, by the dental profession, and that includes the colleges of course, then I want to urge you to be impressed with some of the excellent features of this paper. If the law imperfect as it is has done some good, a better law will confer more benefit and it will be more desirable. I trust you will go to work and encourage your neighbors, and if there is any matter of doubt in any new legislation that may be proposed, something you do not understand, do not oppose the new law, as I know a great many have done both in this Society and out of it, simply because you do not understand its provisions, or have not read it. Enquire about it, obtain full light on anything you do not understand or that seems improper to you, and then if you approve of the general scope of the measure support it with all your might, and get all your friends to do it. (Applause).

Further discussion was participated in by Drs. Crouse and Ottofy, and the discussion closed by Dr. Blair.

Discussion of Dr. E. Parmly Brown's paper, entitled "Crown and Bridge Work" (*see page 469*).

DR. J. J. R. PATRICK: I very much regret that Dr. E. Parmly Brown is not here in person to defend his thesis, but he is a gentle-

man who has all the courage requisite in support of his convictions, and we might have a very lively entertainment this afternoon if he were here. The doctor has asked me to open the discussion on his paper. He has also sent a number of specimens of his work, which, while I will not say they are the perfection of crown and bridge work, are worthy of your examination.

The compliment paid the society by some gentleman from Chicago, while speaking of crown and bridge work in regard to passing around specimens and expressing a doubt of having them returned again, places me in a rather delicate position. Dr. Brown attaches a great deal of importance to the work that he has sent from New York, and expects every particle of it to be returned. I have great respect for the knowledge of human nature that the gentlemen from Chicago have always exhibited in my presence at least. However, I will assume the responsibility of passing around these specimens and expecting every one of them to be returned. (Laughter.)

I do not know what to say about the paper. In the first place, it is a difficult subject to talk about. It is difficult to even illustrate it on the blackboard. I think the work that Dr. Brown has sent here will speak loud enough for itself and appeal to the intelligence of any ordinary dentist. I do not think there is a member of this society present, but who is fully capable of appreciating this work without any comments on my part. I am willing to answer any questions that may be asked to the best of my ability, but I am afraid to criticise this work. I hardly know how to criticise the paper of Dr. Brown, read by Dr. Cushing, but I will make a few remarks in regard to the failures of this class of work. We all hear of the successes, but it may be quite a treat to know something about the failures. I think if we were to candidly confess one to the other our failures (we do not like to do it in public), we would all be mutually benefited. I have here in addition to Dr. Brown's, some forty-eight specimens of crown and bridge work, not sent here as objects of perfection, but simply failures that have been taken from the mouths of patients at different times and preserved. They are not mine, they were sent to me by Dr. McMillan, of Kansas City. I have taken out a great many myself. I have had an opportunity of seeing the work of men from almost every portion of the United States. I have seen miserable work done by

most excellent dentists in every other department of practice. A man cannot be perfect in everything. If he were, he could not make any progress. He never could learn. That is a self-evident fact. It has always astonished me in lecturing before students and in walking through the laboratories of some colleges to see how quick the young men learn to work in the mechanical department of dentistry. After some reflection on the subject I have come to the conclusion that every man who feels himself capable of becoming a dentist and practicing it as a profession is naturally endowed in that way, that is, he, like the surgeon, has a natural passion for mechanics, and that is the only way in which they can perform the work they do. If we take into consideration the small amount of time that our young men who have never used a blow-pipe, who have never used solder, never constructed a piece of metal work in their lives, devote to the mechanical department of dentistry during their college career, it is wonderful that they make pieces of work as good as the poorest in these specimens; and yet that natural feeling and desire to work with tools in a mechanical way unfortunately makes them very conceited. After they leave college they pursue their own course, and if they happen to fall among a class of dentists who are capable of doing that kind of work and adopting anything that is new and good, they are as a rule the most self-sufficient insufficient men I have ever met. (Applause.) If the dentist is successful in other departments and can fill teeth well and perform all other operations in the best possible manner, he cannot separate that from the art of working in gold that class of work called crown and bridge work, the most difficult and probably the poorest work to-day on the average that is turned out by the dentist; at the same time, without a doubt, the finest and greatest triumph in the science of dentistry is the construction and reconstruction of the teeth of the human mouth by artificial means without plates. (Applause.) It is the triumph of the nineteenth century in dentistry, and you cannot be surprised to find so many failures when there are so many at it. I have a case on hand to-day in which the dentists did not allow themselves sufficient time to put in a good piece of work. Three pieces were put in a lady's mouth, two on one side and one on the other. It was done in a week. The operators did not allow themselves sufficient compensation to have paid a jeweler to have done the same kind of work, who could have done it in two days if he had the opportunity.

They had failed to fill the root of a tooth in which the pulp was dead. The crown was prepared and put on after a fashion. I do not think they charged more than \$65.00 for the "job." It is abominable. It would not be cheap even at 25 cents; it was horrible workmanship.

Now, there are certain principles governing the fitting of metal to objects that cannot be ignored and must be learned before any man can intelligently adapt a piece of metal to a form.

DR. McKELLOPS: I would like to ask Dr. Patrick whether he approves of the class of bridge work that has been passed around.

DR. PATRICK: I most assuredly do not. Here is an elaborate piece of crown and bridge work—a failure. In criticising the character of work in any person's mouth performed by any dentist, we frequently meet with the declaration by the operator, however poorly the work may be done, that "I am successful." There are a great many factors connected with this thing called success in the profession. The patient has not as much to do with it as the operation itself. You cannot determine how readily one patient will tolerate certain kind of work that would be impracticable in the case of another. There is a difference between individuals. I have a central incisor which remained in the mouth, with a gold wire extending beyond the apex of the root one-quarter of an inch, and that patient has worn it for twelve years and never had any trouble with it during that length of time. The person is perfectly satisfied with the gentleman who performed the operation. An old lady entered my office a few months ago with a set of teeth made on a rubber base, which were protruding. She was about eighty years of age, and had worn them for twenty years. She said if she could get a dentist to make her as good a set of teeth as those she had in her mouth she would be happy. I examined the teeth of the old lady, and I must say I never saw a more miserably constructed piece of rubber work in my life. There was a complete sulcus where the set of teeth had embedded itself in the soft tissues and had completely exposed parts of the molar process. The soft tissues were nodular, hard, and were like two loops embracing the edge of the plate completely around her mouth. She retained the two parts of the broken plate in her mouth. I told her it would be impossible for me to construct a set of teeth like those. She left satisfied, and thanked me. The cry of success for this character

of work is no evidence that the work is well done. You put on a crown, I do not care how poorly it is constructed, as long as it does not interfere with the closure of the jaws, stuck on with cement, there is nothing to pull it off, pressure is all in the direction of retaining it there. In mastication, the molar teeth or the bicuspidis are never strained, pressure is direct from the crown, it is vertical, naturally food is pressed in between it, then there is slight lateral motion and the crown is held to the adjoining teeth and there is no chance for it to come off. Any man may be successful in sticking it on, if it was done in such a manner that it embraces the periphery of the root above the gum with oxyphosphate. Although the crown may be attached with oxyphosphate, moisture could hardly reach the oxyphosphate, if the work is done with care, the parts concerned are thoroughly studied, and the dentist understands the use of metal. He should understand it enough to know not to buy a large amount of spurious solder and spurious gold, and be able to know the character of the material he is using, what it is composed of, etc. Another failure in regard to making bridge work is that there is an immense amount of unnecessary soldering. Whether poor or useful, there is little difference. I have seen the work done and find such work in all of the specimens I show you.

I do not know that I can say anything more in regard to this work, you are capable of judging of it as well as I, and also of the work Dr. Brown has been kind enough to send here.

[TO BE CONTINUED.]

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

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ILLINOIS STATE DENTAL SOCIETY.

The twenty-eighth annual meeting of the Illinois State Dental Society, held at Springfield last month, was one of the most successful in the history of the society. In point of attendance it was up to, and probably somewhat above the average. In the number of those who became members of the society, there was an unprecedented excess (excepting the meeting in 1872, at Chicago) a larger number having affiliated with the society than in any other year. We believe it was a mistake to select Rock Island for the meeting of 1893, the general sentiment would probably have been in favor of Chicago, and it is still a matter of possibility that the next meeting may be a "special" one held in the World's Fair city on the eve of the opening ceremonies.

The REVIEW has never considered it good policy to use the proceedings of societies for "padding," when the publication has been accorded to it exclusively, and therefore we give prominent place in this issue to six papers and the discussions following them, the remaining ones to appear in the July number. We believe it to be a matter of justice to the author of a paper that it should be circulated and read as soon as practicable.

The majority of the papers read at this meeting were practical and interesting—in every way worthy of careful perusal. Regarding the management of the society's business, we would suggest that in future the programme be so arranged that the last day be devoted to clinics and the exhibition of practical appliances, new inven-

tions, etc. This might result in securing a better attendance on the last two days of the meeting.

THE ANNUAL MEETINGS.

April, May and June are the favored months for State meetings of dental societies. This year the gatherings have been largely attended, particularly in the west. There are general evidences of progress, so far as we can learn from published reports and from personal observation.

The topics for discussion are mainly on principles and science rather than on details and methods of performing operations. The wonderful work of the microscopist is beginning to be appreciated by the everyday dentist, and now it is not difficult to hold an audience for an hour or longer when photo-micrographs are projected on the screen. These are things we note with pleasure, as it shows the gradual awakening of the thought chambers of our busy practitioners. Committees having in charge the getting up of programmes should have in mind the necessity for enlisting the newcomers to our ranks for essayists—once force the diffident to prepare a paper and we generally secure a steady writer. All of the meetings have shown the most friendly attitude toward the dental congress, which must be gratifying to the general executive committee. This great convention is likely to attract to Chicago hundreds if not thousands of dentists, and every effort will be made to give a warm and cordial welcome to visitors both professionally and socially.

WHAT NEXT?

In a quarter of a century the dental engine, rubber dam, electric and mechanical pluggers and other labor-saving appliances have been invented and made to subserve useful purposes in the dental office. It is not easy to catalogue the discoveries in pure science during that period, but to refer to the discovery of the causes of caries and the evolution of the germ theory of disease, will awaken a great many reflections in the minds of our readers. Dwelling upon the above for a moment, think of the possibilities for the next twenty-five years. An infallible cure for loosening of the teeth, with a probability of a perfect prophylaxis! The discovery of a cement which will take the place of gold or other met-

als. A perfect pulp protector, the banishing of arsenic from the dental medicine case. An uniform method of filling roots and a simple and easy treatment for abscess that the merest tyro will be able to follow.

A perfect method for whitening a discolored tooth and the evolution of a porcelain plate that will fit well and not break. These among other things will be hailed with delight by our hard-working confrères of the coming generation. Along with such blessings perhaps we may find such an enlightened clientèle that there will be few or no remonstrances against the payment of just accounts or haggling over fees. What next?

LOOKS LIKE SUCCESS.

In two very pronounced cases of loosening of teeth during the past few months, we have tried the following in their therapeutical treatment: After removing all deposits and fastening the loosest teeth when necessary, we have injected into the pockets aquaozone first, and then followed with a solution of iodide of zinc, ten grains to the ounce of water, *daily*, for thirty or forty days, then twice per week for six months. In both cases, they seem to be cured after four months cessation of treatment. Carbonate of magnesia was used as a dentifrice during the time of treatment. When the gums were flabby and relapsed, we added two minims of a saturated solution of tannin in glycerine to every sixty minims of the zinc iodide solution as it was used. Try it in a favorable case.

PAMPHLETS RECEIVED.

SECOND ANNUAL REPORT OF THE BOARD OF DENTAL EXAMINERS OF
NORTH DAKOTA, 1891.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

To the Editor of the Dental Review:

Dear Sir—Dr. Bogue has introduced glass beads mounted on a mandril for use in burnishing by attachment to the engine. He spoke of them at the April meeting of the Odontological Society in connection with the discussion on revolving burnishers of

steel and agate, round and corrugated. This reminds us of an allusion we made to Herbst's method in a late interview with Dr. Boedecker. We said, you know, doctor, that the Herbst method has not proved practicable. Says he, I scarcely put in a gold filling that I do not use it. We emphasize the importance of it, for we make frequent use of the revolving burnisher in connection with our fillings. A dentist who has not found the value of its use, has a missing point in his office. Try it.

We took much pleasure in reviewing the discussions in the Chicago Dental Society, published in the April number of the DENTAL REVIEW. It gives private satisfaction, for we have spoken strongly, on neglecting to put the mouth in order, as it is the *common* custom of dentists *not* to do, and as we have often said, they are a class of men that manage to be put on prominent committees. We know some that say boldly that they have worked long enough for glory, that when they have a patient come in that has easy going operations required, they attend to those, and let the more difficult ones go. Putting the mouth in order and charging a respectable fee for it, was what Dr. Atkinson "died game," on the altar of self-sacrifice for, as no dentist has ever done.

We have heard much about contour fillings during the past year. There is a vital point in connection with these operations that has not been made manifest. We have been not a little surprised because of this. To Dr. Atkinson is due the credit of dwelling upon the importance of bringing the lateral support up to a tight knuckle, as he always termed it. We have seen him exaggerate the form of a tooth often to secure this service. We have observed that some of those who have had a good deal to say on this subject (contouring), pay no attention to the knuckling. The matter of "food pressure," so termed by Prof. Miller, cannot be too much talked about. It is a source of untold discomfort in many mouths that are predisposed to weak gum borders. We see in some mouths that this food pressure does not create tenderness and loose sockets, but so large a proportion do, we will find it necessary to dwell upon it often. We put it on record here, that to Dr. Atkinson is due the credit of putting into practice by his teaching the important art of "knuckling" in connection with contour operations. This is one of the important facts, in connection with many others, which we shall not let the opportunity slip to give as they come in line. We suggest that the Atkinsonian So-

ciety make note of these things, for our quiver is full of them, which have been gathered from nearly thirty years of very intimate acquaintance with him; we do not hesitate to say more so, than any one now living, and we think as much so as any that have lived (save one), and this outside of his own family. We refer to Dr. S. S. White. There was no man that held so strong a tie on Dr. Atkinson, and as we have often witnessed, in no man's presence did we ever note so much his change of demeanor, and how much it was reciprocated by Dr. White. This remark will convey an idea. We heard him say this: "I will follow you any where." Friendships are not a common commodity, associations very common. We are watching some that have been formed of late.

We were talking with a person since our last letter, who has had much contact with dentists during the last twenty-five years, and it would be a surprise to some, if we should reveal what he told us about men and things. We will only give a hint of what is going on. Later we may sound an alarm. Put this in ethics, "The best men, those who are furnishing the qualities that make a profession noble and useful, are drifting in the current of fitful waters, and they do not see it; we are charitable enough to admit it now, further on it may not be permissible to shut one's eyes to what is sooner or later to be fully approved."

It is only being whispered. Oh! we marvel that so many good men do not follow the courage of their convictions and stem the current that is going against the interests of a "liberal profession." Don't forget "Old Dog Tray." It will come sure.

There is a large number of young professional dentists that are not going to follow in this uncertain drift, and they will put themselves in a thought and purpose ere long that will prove the material they are made of. "We speak that which we do know." Could we tell the contents of five letters that have been seen within a month, these would show which way this thought is leading.

The First District Dental Society only met and adjourned this month because of the State meeting at Albany. This meeting reminds us of some remarks made last year by Prof. Barrett in reference to the discontinuance of giving the degree of M. D. S. Does the worthy Professor and editor have the courage of his convictions or is he talking with his mouth? We have heard of the saying that "Talk is cheap." Men who have earned their reputation

should strike telling blows against such an error until it is hammered out of sight.

A new obtunder has appeared this month, to be used hypodermically ; also a new hand-piece with a slip back movement that fastens the bur. Dr. Crouse's circular has started the tickers from Maine to Georgia. Ten thousand members at \$10 each will give a fund that can be a powerful lever in the hands of wise men. "Such an organized movement can't be bought out." March on, Dr. Crouse, the dentists believe in your ability to succeed. So far as we know we have not heard a dissenting voice.

We omitted a valuable point in our last letter in connection with Dr. Boedecker's paper on the Herbst's treatment of dental pulps. He says he found at the point of division of the coronal portion, and the root portion, a number of micrococci, these in the specimens sent him by Dr. Herbst. The cause of it he assigns to be want of disinfection in those he has experimented with. After disinfection he has not found the micrococci.

A report came to us lately by a patient that the tooth implanted by Dr. Younger at a clinic six years ago in the mouth of the colored porter at White's Dental Depot, had failed. We took the first opportunity to learn the facts. It was a right superior central incisor. We found it all right, but the mate had quite a good sized gold filling which resulted in the death of the pulp. About three months before Dr. Atkinson died, the porter called at his office with his thick lip twice as thick. I saw the doctor open a well-developed abscess and evacuated it freely, dressed it and told him to call again. Whether he did or not, I do not know. I found a sluggish abscess. It is my opinion that if the tooth is not properly attended to by treating the pulp canal, it will endanger the territory of the implanted tooth. However, I saw no change apparent in connection with it, the report of failure was based upon the condition of its mate. How often this happens with bad associations.

The Brooklyn Dental Society has made a new departure in making a compromise with the Second District Society, which includes Brooklyn. They are, during the coming year, to divide the times of holding their meetings. This movement has been in the mill for many years, but the scheme has always been defeated when brought before the society. We learn that the plan is to be tried for one year. Dr. O. E. Hill has been elected President. Dr. Hill's good, jolly nature goes without saying. Now, Doctor,

stir up things and put some of the old time vim that was known in days gone. You'll be gone by and by. You know the time was when the society stood right up front. We recall the many visitors that graced the earlier meetings; many of them will come no more. Dr. Atkinson honored the society with his last public utterance. His attachment for this body had an enduring thought, for which none have made more manifest. Brooklyn dentists cannot afford to let go of a society that brought most of them into prominent notice. In a city of 800,000 inhabitants that cannot support a local society there is a manifest lack of professional pride. We repeat again at the risk of seeming thought to be over-remindful, that the society that does not take interest enough to report energetically their doings will not elevate themselves much in the thought of their fellows. No society has been able to get along without advertising. Where would the Jersey Society have been if they had not advertised, and that vigorously? If they are not what they seem, they think they are. "Whatsoever a man thinketh, so is he."

I will give a fac simile of their circular. "To members only." It is for the purpose of booming the May meeting.

TO THE MEMBERS ONLY.

Do you know that the Central Dental Association is the widest known, the most progressive, most talked of, and affirmed by some to be the best local dental organization in the country to-day.

Now we cannot lay back on our oars and live on prestige gained; the world moves too fast, and we must still be on the alert for everything new and good. It is the duty and should be the pleasure of every member to help the society in every way possible.

You see by the programme for the "May Meeting," we have a good paper and a young man of to-day to read it. This meeting is the last of the season until September. Now let us have a crowd at the dinner and meeting. ~~You~~ You (each one individually) invite some prominent man to be your guest for that evening, no matter how learned he is, how scientific his attainments, or whether he comes from the clergy, the law, medicine or dentistry. You need not be ashamed of the paper, the essayist, or the impression he will produce on your guest, because the man, his presence, his reading, his essay, will not be disappointing; and then,

with all that you can cherish the selfish feeling that your guest is secretly pleased that *his dentist* is a member of a body of progressive professional gentlemen ; and at the same time (excuse the word) you are booming your association and helping to keep it at the top notch of popularity with our brother dentists from other States, who come to our meetings and always seem to enjoy it, *and help spread our fame abroad*. And now, last of all, you gladden the hearts of your obedient servants, the Dinner Committee, who promise something new for September.

CHAS. A. MEEKER,

CHAS. F. W. HOLBROOK.

It may look a bit galorious, but it means a full meeting and a first-class time, and a first-class dinner for \$1.00, laid two hours before the hour of meeting. Luckey, Meeker, Watkins and Stockton are the quartette that do the energizing. Wait till you see Watkins' headrest. It is so comfortable ; it will put the patients asleep so gently ; it is the latest and best. The children will all cry for them. Dr. Levy, report says, goes west, his eliminators are in need of repair. Dr. Faught, of Philadelphia, tells New Jersey about failures in dental operations, a big subject, and will continue to be for some time yet. We note here that question of a work on "Operative Dentistry" has been proposed, yet how would a work of this kind, compare with those we have, written from the modern view of things? Such a work properly prepared would do much to answer the vexed question, why do our operations so often prove faulty?

To our mind, it is easily answered ; we do not mean by this, that we think that we can escape failures altogether. That we have no work to meet this subject is not very strange, and it will continue so until we have those that discuss such questions from a broader view than the mass of dentists do. Rarely do they go farther than materials and faulty manipulation. This proves that mechanics are the main consideration. Surroundings have far more to do with failures. By this we mean when we see reputable practitioners (according to custom) putting in large gold fillings in a superior cuspid tooth and at each pressure of the instrument pus oozes out from under the gum. Something is wanting. It tells us that knowledge is not all crowded into some heads. We give this as a forcible illustration, though quite radical, yet verily *true*.

We note a fact in the May number of the DENTAL REVIEW, giv-

ing Dr. Harlan the credit of suggesting the holding of the Columbian Congress. (He is the original Jacobs.) This will strike Jersey silly, for they verily think they did it. One thing they have done, they claim to be proud of putting up the bars, so no outsiders can practice in their State, unless they give them leave, but one thing they did not do, although they tried to. They started out to follow the foolish steps of New York, to create a degree. Dr. James W. White did them a very quiet and salutary service in an editorial, advising them not to do it, and they did not. A wise decision.

How long will the profession honor such degrees, is a question which is being asked. As New York seems to claim to be the Boss State in politics, why not make this State degree national? Couldn't it be decided by '93 and elect a President of the Congress on that basis?

It seems that Buffalo is not without its afflictions. The establishment of a dental department in connection with the University has created a feud. Human weakness is the cause assigned. Why should not Buffalo have a dental school, can't they have it? We think so.

There is a rumor that New York has an itch for another school, on a far more liberal plan than any school yet. Knowledge vs. Time. We repeat that it is the unexpected that happens; there is not a little unused ability in New York hoping for a chance to teach dentistry in a way that it has never been taught. By this we mean on advanced lines. Ambition is not easily put into a box and the cover screwed down; it is a too lively commodity to be buried alive. There is to be a book published very soon and to be in the market for the next winter students. "Methods of Filling Teeth," by R. Ottolengui.

The Second District Dental Society is twenty-five years old this coming October. It is thought that the agreement regarding the time of meeting of these societies will facilitate the growth of a large interest in dental matters. This is a commendable purpose, if genuine; certainly it is much needed that such a city as Brooklyn should keep abreast of progress. It has been noticeable for many years that Brooklyn dentists have not manifested anything more than a lukewarm interest for our national meetings; why? many have often queried. We understand that the State meeting at Albany had a good attendance, minus the absence of some on the list of the distinguished.

A notice just received tells us that the twenty-third session of the State Association of California convenes in July next. These quarter century societies suggest to us that out of these years we have been gathering large experiences that ought be found recorded in the proceedings of the coming World's Congress in '93.

We have tried to find out how much success has been gained in aid of the Grant Monument Fund. No one seems to be familiar with the matter.

We were told on good authority that many young practitioners are giving free expression of matters in general. It will be wise for those who are in control, to cater liberally to the younger portion. They will, sooner or later, assert themselves. It is not a very wise man who does not see that the signs of the times are in the direction of independence, in thought and action. Men are not going to be dictated to by the few. In the next century, the world is going to governed on the basis of a broader intelligence. Ex.

NEW YORK, June, 1892.

DENTAL COLLEGE COMMENCEMENTS.

GERMAN-AMERICAN DENTAL COLLEGE.

The annual commencement exercises were held at the College Building, Chicago, March 26, 1892. The number of matriculates during the session was ten. The degree of Doctor of Dental Surgery was conferred upon the following (1) candidate: Herman Schuitker, Chicago, Ill.

HOMŒOPATHIC HOSPITAL COLLEGE.—DENTAL DEPARTMENT.

The first annual commencement exercises of the Dental Department of the Homœopathic Hospital College, of Cleveland, Ohio, were held in connection with that of the other departments in the College Building, on March 22, 1892.

The number of matriculates for the session was fifteen.

The degree of Doctor of Dental Surgery was conferred on the following (6) graduates:

P. W. Murton.
C. L. Kelsey.
C. S. Geer, M. D.

J. M. Clyne, M. D.
G. E. Bishop.
W. E. Root.

UNIVERSITY OF PENNSYLVANIA.—DENTAL DEPARTMENT.

At the annual commencement of the Department of Dentistry, University of Pennsylvania, held Friday, May 6, 1892, in the American Academy of Music, Philadelphia, the degree of Doctor of Dental Surgery was conferred by William

Pepper, M. D., LL. D., Provost, upon the following (92) gentlemen; after which an address was delivered by John Guiteras, M. D., Professor of General Pathology and Morbid Anatomy. The number of matriculates during the past session was 196. Graduates:

Carlos A. de Amanda, Brazil.
 Josiah Ayers, P. Ed. Island.
 Harry K. Baer, Pa.
 Walter G. Beitzel, Kans.
 Joseph L. Benninghoff, Pa.
 Johannes Berger, Germany.
 Fred M. Bodine, Pa.
 Francis H. Bond, Pa.
 Edward W. Bonwill, Pa.
 John J. Bowen, R. I.
 Andrew Law Brown, Conn.
 Wilhelm E. Christensen, Denmark.
 Frank T. Clark, Pa.
 Edward B. Coen, Ill.
 Frederick L. Condict, N. J.
 Frank P. Cook, Pa.
 William M. Cooper, Pa.
 Charles W. Crankshaw, Pa.
 Joseph T. Danforth, Pa.
 Victor H. Diefenderfer, Pa.
 Jeremiah H. Dreher, N. C.
 J. Smallwood Eldredge, N. J.
 John B. Ernsmere, N. P.
 Richard J. Flexer, Pa.
 J. Beaver Gearhart, Pa.
 Lewis H. Gilbert, N. Y.
 Henry Ernest Goddard, England.
 A. Herbert Grubb, Pa.
 William Gunn, New Zealand.
 Harry B. Hamilton, N. Y.
 Arch Coombs Hart, Cal.
 Edward B. Hause, Pa.
 Melvin G. Haynes, N. Y.
 Robert H. Hine, Conn.
 Walter T. Holmes, Conn.
 Paul Hotz, Switzerland.
 A. Scott Ives, Canada.
 Edward B. Joachim, Pa.
 George H. Johnson, Jr., Bahamas.
 Oakley Johnson, Wash.
 H. Frank Johnston, Canada.
 James H. Kittams, N. Y.
 Johannes Kniewel, Germany.
 Bernhard Landsberg, Germany.
 Elbert W. Lapp, Pa.
 Burtis E. Lawton, Neb.

W. J. ter Kuile Lemker, Holland.
 Charles J. Leonhardi, Cal.
 William J. Lesuer, N. Y.
 Louis G. Ligondé, Hayti.
 José Lúcio. López, Central America.
 Clarence D. Lukens, Iowa.
 Patrick F. Lynch, Pa.
 Edouard Matthey, Switzerland.
 W. Clay Middaugh, Pa.
 Vethake E. Mitchell, Ohio.
 Frank D. Murto, Pa.
 George H. Nellis, N. Y.
 Charles Newgarden, Pa.
 Edward E. Parshall, Pa.
 Harry D. Phipps, Texas.
 Albert B. Protsman, Ind.
 John W. Richards, Pa.
 Shessie Worth Ridgway, Pa.
 Alfred T. Ross, Pa.
 James Francis Rymer, England.
 T. Darwin Saunders, N. Y.
 P. Frank Schoff, Pa.
 J. Clark Segar, Conn.
 Robert J. Seymour, Canada.
 E. Harvey Skillman, N. Y.
 A. Fowler Smith, N. Y.
 W. Harry Sowash, Pa.
 James R. Stathers, W. Va.
 Charles A. Stewart, Pa.
 Harry R. Swing, Pa.
 Frank C. Wardell, Pa.
 Edward P. Whitlock, Pa.
 S. Edwin Whitmer, Pa.
 Albert Lincoln Willis, Wash.
 George J. Wimmer, Pa.
 Percival Windmüller, Germany.
 Carl Witthaus, Germany.
 Eugen C. Wuensche, Germany.
 Philip W. Adams, Mass.
 A. Lee Foster, Pa.
 William B. Horter, Pa.
 George A. Lawton, Conn.
 Thomas A. McCarthy, N. H.
 Robert Macdonald, Australia.
 John M. O'Bourke, Cuba.
 George R. Ulrich, Pa.

NORTHWESTERN COLLEGE OF DENTAL SURGERY.

At the annual commencement exercises of this institution, the degree of Doctor of Dental Surgery was conferred upon the following named (3) gentlemen:

Geo. W. Westcott.
 Joseph A. Marshall.

Conrad J. Meyer.

MEMORANDA.

A cotton pellet roller is very handy if you use it according to directions.

Missouri Dentists will have a good meeting at Clinton, July 5, 6, 7, 8, 1892.

Dr. F. A. Levy, of Orange, New Jersey, paid a flying visit to Chicago in May.

Dr. W. Herbst has been giving some clinics in the Dental School of Paris with great success.

Dr. Geo. H. McCausey has been appointed a member of the Board of Dental Examiners in Wisconsin.

Vaseline rubbed over rubber dam, makes it slip easily over the teeth and prevents burs and disks from catching it.

Angle's Impression Trays are invaluable to one who has much regulating to do; they are also good for taking impressions for partial sets.

Lintine, manufactured by Johnson & Johnson. Have your druggist order a pound for you and use it for napkins, to wipe instruments, etc.

The Dental Hospital, of London, is now lighted by electricity—a great boon for the students in the short winter days of foggy old London.

The dental department of the Homœopathic Medical College of Cleveland, O., conferred the honorary degree of D. D. S., upon Dr. S. J. Hill, of Fargo, N. D.

NEW DENTAL COLLEGE.

The Dental Department of the Western Reserve University of Cleveland, Ohio. W. H. Whitslar, M. D., D. D. S., Secretary. And still they come.

Dr. A. C. Hugenschmidt has located at 23 Boulevard Malesherbes. Dr. H. was for several years associated with Dr. Thos. W. Evans, and is one of the most promising young men of intellect in the French capital.

MINNESOTA STATE DENTAL ASSOCIATION.

The Minnesota State Dental Association will hold its annual meeting July 13th, 14th, and 15th, at Minneapolis:

251 Nicollet Ave., Minneapolis.

L. D. LEONARD, Secretary.

A DENTAL AUCTION.

A dentist of Ansonia, Conn., a few days since advertised that he would sell at public auction a set of false teeth, "now in the mouth of a patient." The dentist made the teeth seven years ago, and claims they were never paid for.

WISCONSIN STATE DENTAL SOCIETY.

The 22d annual session of the aboved named society will convene in Milwaukee, Tuesday, July 19th continuing three days. A cordial invitation is extended to dentists to be present.

CLAUD A. SOUTHWELL, Secretary.

MILWAUKEE, WIS.

M. Th. David, Doctor of Medicine, and a well-known dentist of Paris, died suddenly at Paris, France, of pneumonia. Dr. David was a favorite pupil of Dr. E. Magitot, and at the time of his decease a Deputy of France, Chevalier of the Legion of Honor and a well-known bibliophile. France can ill afford to lose men of the character and ability of Dr. David.

The 9th annual session of the National Association of Dental Faculties will be held on Monday, August 1, 1892, at Niagara Falls. Roll call at 10 o'clock A. M.

Applications for membership should be sent to Dr. J. Taft, Chairman Executive Committee sixty days before the meeting. J. D. PATTERSON, Secretary.

A dental society has been organized in Rome, Italy, with M. Francesco Serletti, President; Ribolla and Chamberlain, Vice Presidents; Betti, Secretary; Van Marter, Sr., G. Serletti and Angelo, Executive Committee. This is encouraging for the dentists of Italy, and is the beginning, we trust, of an organized dental profession in that country.

ARKANSAS DENTISTS.

The Arkansas State Dental Association elected the following officers June 8: President, L. Augspeth, Little Rock; Vice President, H. P. Dooley, Forest City; Secretary and Treasurer, W. H. Buckley, Little Rock; Corresponding Secretary, L. K. Lond, Pine Bluff; Executive Committee, W. H. Buckley, M. C. Marshall and T. Y. Cooper.

Four per cent of the qualified dental practitioners in Great Britain hold foreign diplomas. Twenty-four per cent of the total number in the United Kingdom are registered with qualifications, *i. e.* diplomas. Of course some of the seventy-five per cent not holding diplomas as shown by the register may hold registrable qualifications as the law only dates back to 1878. This is a gratifying showing. We hope to chronicle the fact by 1900 that *fifty* per cent hold the L. D. S. or some other evidence of qualification—D. D. S. for example!

OMAHA, NEBRASKA.

At last they have an organized profession in Omaha. On Wednesday evening, May 25th, a few practitioners met and formed the Odontological Society of Omaha and elected the following officers: President, G. W. Wertz; Vice President, F. M. Schriver; Secretary, Geo. S. Nason; Treasurer, A. P. Johnston. Committee on by-laws and executive, F. N. Connor, J. C. Whinnery and M. Despacher. The first regular meeting was held Wednesday evening, June 1st, at the office of Dr. J. C. Whinnery, when a constitution was adopted. Success to the new society.

ILLINOIS STATE DENTAL SOCIETY.

The twenty-eighth annual meeting of the Illinois State Dental Society was held at Springfield, May 10-13, 1892. The following named officers were elected for the ensuing year; President, E. K. Blair, Waverly; Vice President, C. N. Johnson, Chicago; Secretary, Louis Ottoby, Chicago; Treasurer, W. A. Stevens, Chicago; Librarian, F. H. McIntosh, Bloomington. The next meeting will be held at Rock Island, second Tuesday in May, 1893.

LOUIS OTTOFY, Sec'y, Masonic Temple, Chicago.

The American College of Dental Surgery, of Chicago, Ill., has recently passed into the hands of a syndicate of business and professional gentlemen. The new management propose to make the American College a first-class institution. Several changes have occurred in the faculty of the American College of Dental Surgery. Dr. J. S. Marshall has been elected Dean, and Drs. R. F. Ludwig, B. J. Cigrand and E. L. Clifford are new additions to the faculty. Dr. L. C. Ingersoll will remain with the college, Miss V. A. Latham, D. D. S., is Professor of Histology and Bacteriology, and Theo. Menges is the Secretary.

IMPOSITION. —A man giving the name of Fred J. Prior, and claiming to represent the "Biographical Department of the Columbian Exposition and World's Fair Illustrated," is going about the city of Chicago and inducing dentists to have their biographies inserted *free* of cost, provided the sucker will pay \$25 for an engraving, which must be made for the publication *by their house only*. The agent in misrepresenting facts has secured a number to advertise who otherwise would not do so. Drs. Harlan and Ottofy have given him no authority, and it is doubtful that Drs. Allport, Brophy and many of the others whose names he has, have authorized the use of their biographies in such a bare-faced advertising scheme.

Dr. A. H. Bennett, Bruxelles, Belgium, relates the following incident of one of our Americans, doing Europe, who came into his office in need of the services of a dentist:

"Doctor," he said, "I have a tooth here I want filled, and I want it done with Amalgum; and I have another I want *pulled*. But before you commence I want to know how much the *job* will cost." Dr. Bennett replied, "Well, sir, if you have a tooth filled it will cost at least \$4.00, and if there is one to be extracted that will be \$2.00." The man threw up his hands and exclaimed, "Je-ru-sa-lem! I won't pay any such prices as that. Why, up in Michigan, where I live, a fellow comes around every month and only charges 10 cents for extracting, and 50 cents for fillings; and for \$3.00 I can get a full set of teeth."

WORLD'S COLUMBIAN DENTAL CONGRESS.

There will be a meeting of all sub-committees of the "World's Columbian Dental Congress" at Niagara Falls immediately after the meeting of the American Dental Association.

The date of the latter meeting is on August 2d, and usually continues for four days, so that the time for the meeting of the sub-committees will be on the 5th or 6th. It is important that there should be a large meeting in order that all may work understandingly for the best interest of the Congress. Please notify the Secretary whether you will be present.

By order of the Executive Committee. Signed,

W. W. WALKER, *Chairman*,

A. O. HUNT, *Secretary*,

Iowa City, Iowa.

DENTISTS TO ORGANIZE IN OREGON.

The leading dentists of Portland gathered at the Portland to pay a fitting tribute to their distinguished friend and guest, Dr. W. W. Allport, of Chicago, who is visiting his son. Dr. Allport is recognized as one of the leading men in the profession, and his name is familiar to every practitioner. Those present were: Drs. W. W. Allport and son, H. W. Allport, J. R. Cardwell, J. Welsh, S. J. Barber, C. R. Templeton, L. E. Hibbard, W. B. Knapp, and E. G. Clark.

After Dinner the party was escorted to one of the private parlors, where the President of the Board of Dental Examiners, Dr. J. R. Cardwell, acted as Chairman of Ceremonies and delivered an address of welcome to Dr. Allport.

The latter responded in a very happy manner, expressing pleasure in being honored, and being able to meet a few of the dentists of Portland. He spoke of the vast possibilities of the Northwest, and urged the State Dental Board to re-

member the responsibility resting upon them to use all the means within their power to lay well the foundations for the future of the profession, and suggested that there ought to be a State Dental Society as a means to this end.

On motion of Dr. Knapp, temporary organization was effected by electing Dr. J. R. Cardwell, Chairman, and Dr. L. E. Hibbard, Secretary.

Drs. Cardwell, Welch and Knapp were designated to issue a call to dentists in all parts of the State to meet and organize.—*Exchange*.

ADVERTISING "PROFESSORS."

At the regular monthly meeting of the Atkinsonian's (a dental society of Chicago), it was unanimously decided that the *custom of advertising* in vogue among the *Dental Colleges* of Chicago is *pernicious* and *injurious* to the best interests of the dental profession; it was also decided to attempt to eradicate this evil. The present move of this society is to be followed from time to time by such action as the circumstances may warrant.

The following resolutions were unanimously adopted, and the Secretary was instructed to send copies of the same to the various dental colleges, societies and journals now located in Chicago.

Whereas, We are of the opinion that the *practice of advertising* on the part of *dental colleges* is one of the most *injurious* and menacing customs of the day, and

Whereas, This practice has a deleterious effect on the students of the various dental colleges, be it

Resolved, That the Atkinsonian's most urgently recommend that this practice be discontinued by those responsible for it; be it further

Resolved, That this society shall not abandon its warfare against this most reprehensible practice until it is completely eradicated.

H. H. WILSON,

President.

CHICAGO, May 3, 1892.

T. A. BROADBENT,

Secretary.

[These resolutions were adopted at late meetings of the Chicago Dental Club and the Hayden Dental Society of Chicago.]

TWENTY-SECOND ANNUAL MEETING OF THE KENTUCKY STATE DENTAL ASSOCIATION.

Programme for the twenty-second annual meeting of the Kentucky State Dental Association, to be held at Louisville, Kentucky, Tuesday, Wednesday, Thursday, June 21, 22 and 23, 1892, at the Louisville College of Dentistry, Chestnut Street, between Floyd and Preston.

Address by the President, Dr. H. B. Tileston, Louisville, Ky.

PAPERS.

Tuesday June 21, 1892, at 2:30 P. M. "The care of children's teeth." Dr. S. T. Butler, Litchfield, Ky. Discussion opened by Dr. J. B. Alexander, Louisville, Ky.

"Effects of acquirements upon hereditary." Dr. A. O. Rawls, Lexington, Ky. Discussion opened by Dr. J. S. Cassidy, Covington, Ky.

"Dental caries." Dr. M. W. Steen, Augusta, Ky. Discussion by Dr. Wm. Van Antwerp, Mt. Sterling, Ky.

"Antiseptics." Dr. J. S. Cassidy, Covington, Ky. Discussion opened by Dr. J. C. Blair, Louisville, Ky.

"Defects of Palate." Dr. G. Molyneaux, Cincinnati, O. Discussion opened by Dr. H. B. Tileston, Louisville, Ky.

"Gold Crowns and Bridge Work," Dr. C. G. Edwards, Louisville, Ky. Discussion opened by Dr. B. Oscar Doyle, Louisville, Ky.

"Educating The Public," Dr. Henry Pirtle, Louisville, Ky. Discussion opened by Dr. B. Oscar Doyle, Louisville, Ky.

"Subject to be announced," Dr. J. F. Rees, Owenton, Ky.

CLINICS.

All clinics will be given in the Infirmary of the Dental College at such hours as may be announced.

SUBJECTS.

Antagonizing Wax Models, Dr. W. E. Baxter, Frankfort, Ky.

Filling With Sponge Gold, Dr. J. W. Clark, Louisville, Ky.

Filling with Non-cohesive Gold, Dr. E. M. Kettig, Louisville, Ky.

All Porcelain Bicuspid Crown, Dr. F. Peabody, Louisville, Ky.

Adjustment of Rubber Dam, Dr. B. Oscar Doyle, Louisville, Ky.

Root Filling, Dr. J. C. Blair, Louisville, Ky.

The State Board of Examiners will meet daily during the session to examine and register applicants.

HOTEL.

The Williard Hotel has been selected as headquarters and a special rate of \$2 a day arranged for. This hotel offers excellent accommodations, and being located on the lines of street cars, running to the college building, etc., it is believed that visitors will find it a most convenient place to stop.

Members of the dental profession at large are cordially invited to meet with us, and assist in making this meeting of great profit.

Members or visitors having anything new in appliances, or methods, will have proper time allotted to them, by applying to the Executive Committee. For any further or special information, write to Dr. J. H. Baldwin, Secretary, 609 West Chestnut St., Louisville, Ky.

AMERICAN DENTAL ASSOCIATION.

The Thirty-Second Annual Session of the American Dental Association will be held at Niagara Falls, N. Y., commencing at 10 o'clock, A. M., Tuesday, August 2, 1892. GEO. H. CUSHING, 96 State Street, Chicago, *Recording Secretary*.

COCAINE—ITS ANÆSTHETIC PROPERTIES.

From a series of experiments with cocaine, Dr. A. Bignon, of Lima, has added a number of interesting facts relative to the anæsthetic action of this alkaloid (*Bull. Gen. de Ther.*) He found that cocaine loses its anæsthetic properties when in *acid* solution. They are not destroyed properly speaking; they merely become latent. In fact, to restore them, it is only necessary to neutralize the acidity of the solution. The intensity of the anæsthetic action of the cocaine solution, it is claimed, attains its maximum when, after complete neutralization of the acidity, the alkaloid is suspended in a slightly alkaline liquid—forming a preparation which, owing to its milky aspect, has been designated *milk of cocaine*.

Most of the salts of cocaine, particularly the crystallized hydrochlorates extracted from acid liquids, retain a certain quantity of the acid. For this reason it is maintained their solutions do not possess the same anæsthetic power as those of the alkaloid itself, a part of that power remaining latent in the former case.

Milk of cocaine is regarded by Dr. B. as the most powerful form of cocaine. It may be obtained by precipitating the hydrochlorate or any other salt of the alkaloid with a slight excess of sodium carbonate; sodium bicarbonate is not considered quite so efficacious.

It is furthermore claimed that there are crystalline hydrochlorates of cocaine

which are so acid that the same anæsthetic phenomena can easily be obtained with five centigrammes ($\frac{3}{4}$ grains) of the neutralized salts employed in the form of cocaine milk, as with ten centigrammes ($1\frac{1}{2}$ grains) of the same salt in ordinary aqueous solution. Finally, the author believes that it is largely to the difference in the degree of acidity of the solutions, as employed by different authors on this subject, that the divergence of opinion in regard to doses necessary for cocainic anæsthesia ought to be attributed.

MOUTH ANTISEPSIS.

In order to put into proper light the importance of mouth antiseptics—and of proper care in operations about the mouth, Dr. Hugo Dellevie (*Dent. Med. Zeit.*) gives a review of the kinds of microorganisms found in the oral cavity, which already exceed the astonishing number of over one hundred. He describes a streptococcus unknown before this, which he had found, bred, and carefully observed. This streptococcus is of the most virulent type, and possesses against most antiseptics a power of resistance greater than that of most of the other microorganisms.

Pneumonia cocci have been found in large numbers in the saliva of healthy persons; they are always present in the saliva of patients suffering from pneumonia—during convalescence, and in many instances after the patient has recovered. It must be accepted that the presence of this microorganism is harmless only as long as the lungs are in a *sound* and healthful condition; but as soon as those organs lose their power of resisting disease, the coccus commences its deadly work. It often extends to the lymphatics, and is frequently found in large numbers in the abscesses which it provokes in the vicinity of the teeth and mastoid process. This same germ has been found by some investigators in the saliva of patients suffering from cerebro-spinal meningitis; by others, in endocarditis and parotitis.

The streptococcus tetragenus of healthy saliva is often found in phthirical cavities and in mastoid abscesses. The ubiquitous staphylococcus pyogenes aureus and the streptococcus appear in every buccal cavity, and to these the saliva owes its power of producing a pus discharge. It is a matter of course, that without anything being done on the part of the patient, suppurative processes can be produced in the oral cavity by these microbes. Even septicæmia, pyæmia, or metastatic abscesses can be attributed to this cause. The saliva of one infected by syphilis, can convey the disease by kissing, by wounds from a bite, or by sucking wounds (as in the ritual of circumcision). By such measures tuberculosis has often been conveyed from one to another. The register of such diseases as diphtheria, actinomycosis, aphthæ and influenza which have been communicated by the fluids of the mouth, is complete. Care and cleanliness of the oral cavity should therefore be observed for prophylactic and therapeutic reasons. The author recommends solutions of corrosive sublimate (1:1500), beta-naphthol (1:100), thymol (1:100), salicylic acid (1:350), saccharin (1:250), or benzoic acid (1:100). Particular mention is made of the necessity of dentists being careful about disinfecting their instruments.

OBITUARY.

HARRY G. DUNAVEN.

Died, Sunday May 29, 1892, at Pontiac, Ill., Dr. Harry G. Dunaven, aged 24 years. He was a nephew of Dr. Marvin E. Smith, of Chicago, a graduate of Ann Arbor, Class 1889. He practiced his profession in Chicago for one year after graduating, and two years ago accepted a position in the office of Dr. H. H. Townsend, at Pontiac, Ill., which position he ably filled up to the time of his death. He was a good operator, a successful mechanical dentist, and especially skilled in crown and bridge work. Being of a kind and generous nature, gentle and sympathetic with his patients, he became a great favorite among a large circle of young people, who mourn his untimely death. Dr. Townsend has lost a congenial companion, a valuable assistant, and the profession a worthy member, who, although comparatively unknown to the majority, gave promise of becoming a prominent and honored member of the profession he loved.

THE DENTAL REVIEW.

VOL. VI.

CHICAGO, JULY 15, 1892.

No. 7.

ORIGINAL COMMUNICATIONS.

ORTHODONTIA—A PRACTICAL CASE.

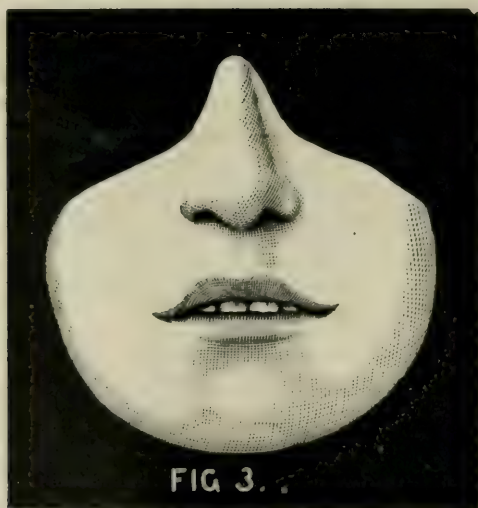
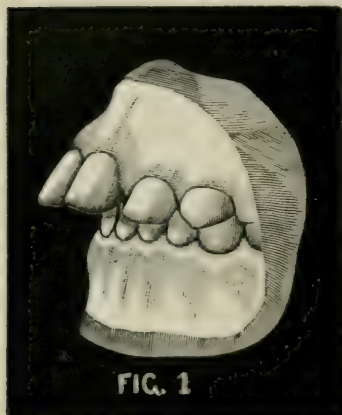
By C. S. CASE, M. D., D. D. S., CHICAGO, ILL.

The case in orthodontia I desire to present at this meeting is one which I think will be found of unusual interest. 1st. Because of the difficulties which seem to be presented in the way of, even a beginning, toward restoration. 2d. On account of the simplicity of the method which was adopted, and its success in correcting a most unhappy deformity. And 3d, Because I shall be able to show you, in plaster models, the entire change in teeth, jaws and facial expression, together with the apparatus that was actually worn—with slight variation—from the beginning to the completion of the operation.

The case is one of a young lady $13\frac{1}{2}$ years of age when it was commenced, and 16 when finished.

By examining the models it will be seen that the difficulty was not so much because of the marked protrusion of the upper teeth and jaw, with consequent deformity of the face (see Figs. 1, 2 and 3), but mainly on account of the close occlusion of the jaws, which permitted the lower front teeth to strike into the gums in the rear of the upper (see Fig. 4), and so extensively as to keep the mucous membrane inflamed and its surface often abraded, while the alveolar ridge and teeth were being forced further forward, making it impossible to reduce the deformity until the jaws were opened by permanently lengthening the posterior occluding teeth.

Facial deformity in these cases is always more or less marked, and its unpleasantness, not more largely due to the exposure of protruding teeth than to an irregular fullness and peculiar hanging, or immobile expression of the upper lip; partly produced by a



conscious effort of the muscles to keep the teeth covered. (*This is not shown in Figs. 2 and 3 nearly so strongly marked as in the model, or face itself, before correcting.*)

After trying—without avail—a complicated affair for lengthening the bite, I finally inserted a simple black rubber plate that

covered the roof of the mouth and possessed a thickened portion in front to receive the thrust of the six lower anterior teeth. This was worn during the entire operation, with occasional alterations according to the demands of change. The posterior teeth were thus prevented from forcible occlusion until nature had produced in them a sufficient growth and fixed them permanently in their extended positions.

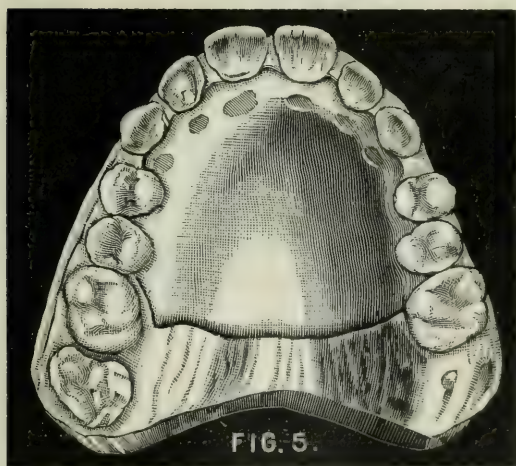
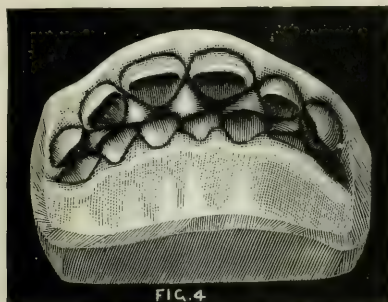


Fig. 5 * is made from a model of the upper jaw at the beginning of the operation, with the plate in position. Note interproximal spaces.

**All of the cuts which illustrate this report were made from photographs of the plaster models and apparatus exhibited at the meeting of the Illinois State Dental Society, with no variation in position or shape.—[EDITOR.]*

The only apparatus that was used to overcome the prognathous position of the teeth and jaw was a simple band extending from the molars around the front teeth; the ends of the band were soldered to German silver wire bars (No. 19 E. s. g.), which were threaded and passed through long tubes, or pipes, attached to the buccal surfaces of the banded first molars. The first bicuspid were banded and carried short pipes in which the bars loosely rested, to aid in giving greater stability to the anchorage by preventing the molars from tipping forward.

The centrals were also banded and possessed lugs for holding the traction band in position.

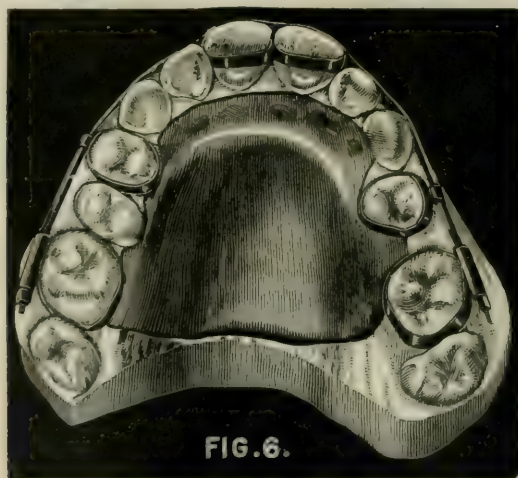
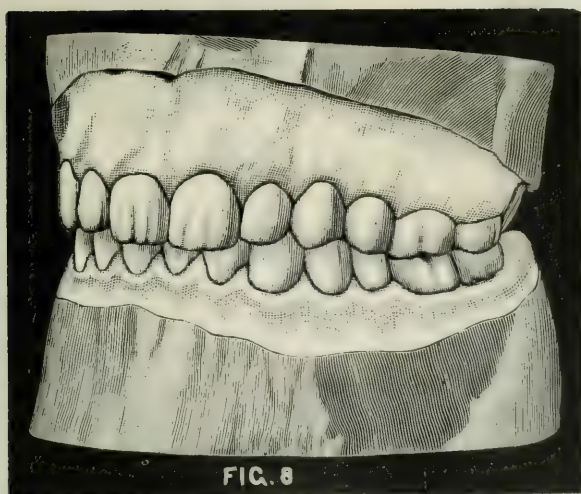


Fig. 6 represents a model made from an impression taken during an intermediate stage of the operation with the traction apparatus in position. The interproximal spaces are closed and also the space nearly closed where a bicuspid had been removed. The left second bicuspid was also removed about this time. The plate that was worn is laid upon the model.

The nuts were never turned so as to give a painful tension to the traction band, and the apparatus was worn from the beginning to the end of the operation with comparative comfort and so little mental and physical derangement that school duties were never interrupted on this account.

This I consider one of the most important factors in correcting every case of malposed teeth, compared to which time is a matter of little consequence. If there is anything distasteful to me



it is to hear the much vaunted expressions relative to ease and shortness of time in which certain *skillful* operations were or can be performed ; and especially a case in orthodontia, the treatment of

which should always be kept subservient to the physiological demands of nature, regardless of time.



Figs. 7, 8, 9 and 10 show position of teeth and facial expression at the close of operation. A staying band had been worn with the teeth in this position for about six months.

ANTISEPTIC DENTISTRY.

BY GARRETT NEWKIRK, M. D., CHICAGO, ILL.

The subject assigned me by the Executive Committee, for a paper to be read at this meeting, is one of great interest and importance. It is also a question of such magnitude that it cannot be treated exhaustively in a single article of reasonable length.

It shall be my purpose to give briefly some of the reasons why we should, and how we may, apply the principles of antiseptis to everyday office practice.

What do we mean by the term antiseptic?

It is—anti, against—against the septic.

We must learn then, first, what we mean by the term septic in general, and as applied to dentistry in particular.

In the older dictionaries the term stood for whatever promoted putrefaction. The antiseptic, therefore, was that which should prevent or retard putrefaction. For example, to give the most familiar illustration—moderate heat was septic; extreme heat or cold antiseptic.

The attempt to make fine distinctions between antiseptis and disinfection has caused confusion in the minds of many. In practice, the two are so closely associated they scarcely bear separation, as I think will appear from considerations following:

As I understand it, to use the plainest possible English, sepsis is *poisoning*, by anything which is of the nature of an organic ferment, or the product of such ferment.

Poisoning by any inorganic substance, such as nitric acid or arsenic, or an active principle of vegetable origin, like strychnine or aconite or opium, does not come within the meaning of the term. They are poisons, but not septic; their action is chemical or irritative. They call for antidotes, but are not opposed by antiseptics. Their action is limited by terms of quantity. They may act upon certain nerve centers very actively, but if not sufficient to produce paralysis or death, their force is spent; their effects pass. They are not *living* forces; they possess within themselves no multiplying power. They do not increase. True septic agents, on the other hand, do have this power of indefinite, and often very rapid, reproduction and multiplication. They are themselves alive within the living. They are not limited by laws of chemistry, or by rules of quantity, but by *laws of life*—by conditions favorable or

unfavorable to reproduction. A septic agent is simply that which contains the germ, the seed, the spore, the reproductive cell of a low form of life, that with conditions favorable to itself is inimical and destructive to the substance belonging to another and higher form of life.

The act of introduction is *infection*. *Infectious matter is septic matter*. Disinfection is the act of destroying infectious or septic matter.

Antisepsis is to prevent—is against sepsis. It includes necessarily disinfection. The latter is the minor term.

Infection is done variously, by whatever means the septic material is brought into living contact with the body which it poisons. The small pox patient has probably been infected through the agency of the air, but he may have been inoculated through the skin. The scarlet fever and the measles patients have been infected usually by the road of the lungs, the typhoid fever victim by his alimentary canal.

The milkmaids, whose immunity from small pox first caught the observation of Jenner, had been infected with vaccina through abrasions on their hands.

By virtue of this wonderful discovery, the people of the civilized world to-day are infected with the same matter introduced at the point of the surgeon's lance.

It is simply voluntary and intelligent infection with one less dangerous virus (an attenuated virus it may be of the same sort) to prevent another infection of deadly fatality.

But mark you, what the surgeon does designedly with the matter of vaccina, he may do unintentionally with the germs of septicæmia or the virus of syphilis.

The one condition of infection is this, that the septic poison, the seed, shall be in some manner brought to the fluids of the body—blood, lymph, serum, protoplasm—soil in which it may grow and reproduce its kind.

I was somewhat surprised a year ago to hear a venerable and highly respected member of the dental profession antagonize the modern ideas of disinfection, in this wise—as I remember, he said: "We drink at fountains from cups which have passed from mouth to mouth, and have not been disinfected. We go to hotels and use forks which have been in the mouths of we know not whom; we sit in seats in railroad cars that may be covered with germs; we ride in

crowded street cars laden with the breaths of many occupants,—we do all this with comparative immunity. Why then should we be so extremely careful beyond ordinary washing of our dental instruments?"

I say I was surprised because such an argument shows plainly that his thinking had never been thorough enough to go to the core of the subject.

The alligator in the Florida swamps is covered with scales for his protection. So is man. The cuticle is no more a part of living tissue than the scales of the alligator. Ordinary agents of attack are repelled and fall harmless from either. A germ to infect must penetrate within this coat of mail. The same is true largely of the mucous membrane. The man is not poisoned because poisons are within his mouth. They are not necessarily within his body because they are in his stomach or intestine.

Many deadly agents are destroyed by digestion, or passed on without digestion or absorption. To every normally protected surface they are innocuous. If there is no breach in the wall, the enemy besieges in vain. But woe to the surface abraded, the spot unprotected by nature's usual armor. A perfectly whole man might be bathed in the infectious matter of vaccina; there might be a spoonful in his mouth, which could even be swallowed without infection, and yet an amount so small that it could not be seen, of the same matter introduced on the point of a needle within a living cell would inoculate as certainly as that two and two make four.

The surgeon may open a great abscess; he may perform a laparotomy, where his hands are bathed in septic matter, and no harm follow to him; but if there be anywhere a *broken* surface, even a pin scratch, he is in imminent danger. Woe to him, if with point of infected knife or needle he touches his own blood. His life may pay the forfeit, or disease may scourge him from the crown of his head to the sole of his foot.

The ordinary condition of the cup or glass at the well or fountain, is that of smoothness. It is not likely to catch and hold on its edge infectious or other matter. It is frequently washed, and its coolness is unfavorable to the growth of organisms. But if there were upon the edge of the cup a ragged point of tin; if that point should by any possibility become infected with septic germs from the mouth of a drinker it might inoculate by scratching the

lip of another. It is within the range of possibility that such things have taken place.

Forks and spoons are of smooth metal. They are not liable to infection, and they often pass through the best possible condition for disinfection, namely, boiling water. Furthermore, all food well cooked, and all drinks of boiled water, have been disinfected by heat.

As to the argument from the experience of those who ride in crowded street cars and breathe atmospheric "hash," it is probably true that many are infected thereby, so far as infection may be communicated through respiration.

If the integrity of the epithelial covering of the mucous air passage be not perfect, the individual takes his risk of infection by any poison to which he is susceptible, and that is so transmissible. Nevertheless his risk is infinitely smaller than that of the surgeon who pricks his own skin, or that of his patient, whom he inoculates with the infected instrument.

Let us further illustrate. Here is a person in whose mouth there is a chronic alveolar abscess, or an alveolar ulceration with pyorrhœa. Pus is daily discharged and mingled with the fluids of the mouth. More or less for months or years it is mixed with food and drink and swallowed. It may be at times of the most virulent character, yet the individual is not consciously harmed thereby. At the point of disease nature has made a wall, a limit between the living and the dead. The living may pass to the dead, but the dead may not come into the living. The daily swallowed infectious matter is digested and destroyed. There may not be absolute immunity, though the danger is comparatively slight. But mark you, let a point of steel but touch this infectious matter and then be carried but one inch *in the same mouth*, or to another mouth, with puncture, and there may follow a train of dire results. There may be extensive ulceration, local or general blood poisoning; there may be boils, carbuncles, or pulmonary, hepatic, or abdominal abscess, and not impossibly death. "*Behold, what great matter a little fire kindleth.*" There was not more comparative potency in Mother O'Leary's lamp and the straw in Mother O'Leary's barn, which burned Chicago, than there is in the microscopic germ of septicæmia or syphilis in touch with their fuels.

A young man of eighteen years, brother of one of my patients, applied to a surgeon for a slight operation on his foot and had the

misfortune to be inoculated with an infected bistoury. Abscesses followed in the lungs and elsewhere, and after suffering for months, and undergoing several surgical operations, with no end of anxiety on the part of his family, he died.

And all this loss and grief was suffered and borne because a certain man was ignorant or lazy or careless, and failed to disinfect one little instrument. If he now appreciates the truth, one would think his peace of mind would be gone forever. An experience like this would cloud the sky of a lifetime. Where could be the possible compensation or consoling thought to the surgeon who had inoculated a patient with the virus of syphilis? As I understand, it was claimed by the first surgeon in this case that "*Erysipelas had set in.*" We used to hear that expression frequently. Have you noted that it has quite fallen out of the language in these days of antiseptic surgery? It was often merely a term of convenience, to cover unexplainable happenings which we know now were of septic poisoning.

That which holds true of the general surgeon is applicable to the dentist. *He uses a greater number of instruments liable to be infected, in close proximity to territory favorable for infection than any other man on earth.* Every instrument which enters a carious tooth is likely to be infected by one or more of the agents or products of decay. A smooth excavator may not be, or if it is, may be readily cleansed, but a bur with its many grooves is certain to be, and is not easily cleansed. One of the most, if not *the* most dangerous instrument for infection is the bur when allowed to slip from the cavity and make a punctured wound of the soft parts.

Let me here remind you that of all wounds the puncture is most to be dreaded.

Ordinarily nature protects herself from inoculation by an instantaneous flow of blood, which washes away all foreign matter, or, mayhap imprisons it within a clot, but the punctured wound defeats her efforts.

The hypodermic syringe is a device to secure absorption by means of a puncture through which nothing may return.

The penetration of the rusty nail into the foot of the boy—the wound by the septic tine of a stable fork, as sources of tetanus, are examples familiar to common experience.

The chance of making a punctured wound with an infected bur, adds another reason for the use of rubber dam in preparing

cavities. How often does the dam ward off the bur from contact with soft tissues, or, failing to do this completely, removes the principal part of foreign matter adherent thereto—just as cloth or leather wipes the tooth of the rabid dog or the fang of the rattlesnake, so greatly diminishing the chances of inoculation.

Forcep blades are especially liable to become septic, and remain so, first, because they are used so often upon teeth diseased and in mouths diseased; and, secondly, because of the roughened surfaces of their jaws. They are especially dangerous because they will be applied to other teeth in other mouths, and crowded down beneath the gums. They would doubtless infect oftener were it not that the parts wounded by them are highly vascular and usually bleed very freely. Nevertheless, given a forcep touched with the germs of pyorrhea, septicæmia or syphilis—possibly other poisons of which we are as yet ignorant, how easily might any of these be transmitted from one patient to another.

Of such transmission there are many recorded instances, and little doubt that the unrecorded, if known, would far outnumber those.

In relation to possible infection, rubber dam clamps may be classed with forceps. Whatever is about the necks of teeth, adheres to the clamp, and becoming dry is hard to remove. It may be doubted whether one in fifty of the clamps used by us are kept always surgically clean. As another possible agent we may not overlook the rubber dam itself, the edges of which, forced beneath the gums, are sure to carry away some of the adherent secretions of the part, and rubber is particularly hard to disinfect. The passage of rubber dam from mouth to mouth is one economy certainly that is scarcely "penny wise," while it may be many pounds foolish.

However, as a means of preventing infection by all other means, there is nothing to compare with it or take the place of a piece of *clean rubber dam*.

We must remember too, that intelligent people are thinking of these things, and will continue to think more and more. They observe our methods often more closely than we suppose.

I have purposely omitted so far any mention of the broach and the aseptic management of pulpless teeth, or of teeth the pulps of which are being devitalized, because these special subjects have been of late pretty thoroughly treated and brought to the attention

of every intelligent reader of dental literature. I have sought rather to keep in view the surgical principles involved within the whole range of practice, and lead up to certain questions which I wish to ask, and would like every one to ask himself.

Are we practicing dentistry antiseptically?

If not, why not?

There are many, no doubt, who are well informed as to the danger of sepsis, and who realize in theory the necessity of antiseptics, but from lack of a proper system, do not carry out their ideas practically. In order to do this there are required certain special arrangements and conveniences, together with scrupulously careful attention to details. There must be also careful instruction of assistants, and keen oversight that orders are obeyed.

The dentist here may get valuable hints from the general surgeon. How does he go about operating with a view to prevent infection of his patient? First, the surfaces near the part to be operated on are thoroughly cleansed with water and soap, followed by alcohol, and possibly the bichloride solution. The hands of the operator and his assistants are likewise cleansed. Their coats are laid aside, and other clothing covered with clean gowns. The instruments have been made aseptic and are laid upon clean napkins. The water to be used has been boiled, and sponges are sterilized. The operation throughout has in view the avoidance of any possible introduction of foreign matter, and the final dressing of the parts is strictly antiseptic.

Should the dentist be any less careful as to surgical cleanliness as to himself and his instruments; and should he not also cleanse the mouths, and especially the teeth before he proceeds to further operations?

As before said the dentist must have special arrangements and conveniences.

If water pressure be available, the fountain cuspidor. If not, then one nickel-plated, to be cleansed after each patient's use, kept partly filled with water, and *daily scalded*.

Hot water always ready for use upon instruments, and for cleansing the hands of the operator. The hands cannot be so thoroughly cleansed with cold water as with warm.

An abundant supply of towels and napkins. There should always be a clean napkin on the bracket upon which are laid the instruments, and this should be changed often. It is my habit to

buy plain towels, one of which will make two napkins cut to fit the bracket. I take pains to mention this, because I have often observed dentists using merely the cloth cover of the bracket which had become stained and saturated till it was a sight to behold if not to admire. One could scarcely imagine anything better calculated to promote surgical *uncleanliness*.

An indispensable convenience to me for purposes of cleanliness consists in the use of three or four inch squares of bleached muslin, such as one may buy for five or six cents per yard. My assistant keeps a sufficient number of these prepared, and I should scarcely know how to keep house without them.

Am I removing tartar, or treating a case of pyorrhœa, one of these squares is always in my left hand, serving to hold the lip, and when the instrument needs wiping it is used for that purpose, and consigned to the waste basket and the fire. I use them for the wiping of burs and excavators, for stripping the soiled cotton from broaches when cleansing pulp canals, for absorbing blood, etc., for laying hold of loose pieces of amalgam or tartar in the mouth, for receiving the tooth just extracted, for wiping the mouth mirror or the hand glass, for use with a little alcohol or chloroform to cleanse the points of the pliers when gummed with sandarac, for removing dirt from the engine hand piece, etc., etc.

Infinitely better, it seems to me, to use this inexpensive muslin, which may be at once consigned to destruction, than to depend on the heavier, less convenient napkin that accumulates filth upon filth to be carefully saved for the washtub. It is the rule now, both in surgery and medicine, to dispose of all filth and products of disease rather by fire than the laundry.

A great convenience, one that was suggested to me some years ago by Dr. Harlan, consists in a number of small cups or jars for holding burs. One is able by this means to keep them assorted and only use those which are clean. As a rule, when a bur has been used once or twice its glory has departed, and it should go at once into the waste or a convenient box kept for those which may be worth sharpening. On the bracket too should be a receptacle for burs which have just been used and one may wish to use again after they have been cleansed and disinfected.

All burs when received, either new or sharpened, should be given a coat of some disinfectant oil, for insurance against both rust and infection, and the rule applies equally to excavators,

scalers, forceps, clamps, etc., which after cleaning are put in place to await use.

A simple and convenient device for the use of heat to clean instruments, is the following:—Take a small tin or copper tea-kettle, having a straight spout. Have the tinner attach to the lid of the kettle two or three tubes an inch in diameter and long enough to reach nearly to the bottom. These closed at the bottom and opening outward, may be used for dry heat or oil, while all the long instruments may be dipped in boiling water through the spout.

Any sort of small burner will keep the water at the boiling point with but little trouble or expense.

Antiseptic dentistry or antiseptic anything, means *cleanliness*. But how can we expect surgical cleanliness if we fail to appreciate the ordinary cleanliness reached by the simplest means. By hot water and soap, the dentist himself, his coat, his hands, and all the belongings of the chair, and bracket, may be clean. Then, with a little care surgical cleanliness is added, and antisepsis is complete. I leave the subject at this point hoping I have developed sufficient interest to cause a free discussion.

REPORT OF THE SUPERVISOR OF CLINICS.—ILLINOIS STATE DENTAL SOCIETY.

BY D. M. CATTELL, D. D. S., CHICAGO, ILL.

Wednesday, May 11th.

Clinic, Dr. J. N. Crouse, Chicago. *Patient*, Dr. C. N. Trompen, Roseland.—Lower left second molar. Mesio-compound cavity. Dam held in place by use of punk and thick sandarac varnish. Filling one-half or two-thirds of cavity with Globe foil No. 3, non-cohesive—locked in with Globe foil No. 10, extra cohesive—the case requiring about one-eighth oz. of gold.

Clinic, Dr. W. B. Ames, Chicago. *Patient*, W. W. Tobey, Danville.—Second inferior bicuspid. Disto-compound cavity. Filling, oxyphosphate of copper cement; black oxide of copper with phosphoric acid.

Clinic, Dr. J. W. Collins, Lincoln. *Patient*, E. J. Rose, Springfield. First superior right molar. Mesio-compound cavity. Filling, combination Pack's cylinders No. 4, semi-cohesive, and Williams' No. 60 foil, using the Harris dental pneumatic mallet.

Clinic, Dr. T. L. Gilmer, Chicago. *Patient*, Dr. C. E. Austin, Chicago. First inferior right molar. Disto-compound cavity. Operation, gold inlay. Ames' method of operation with Gilmer's improvement of bending up the edges of gold so solder will more easily flow up forming the contour. The operator showed the different steps in the operation with the final inlay cemented into the cavity.

Thursday, May 12th.

Clinic, Dr. C. N. Johnson, Chicago. *Patient*, Dr. W. F. Green, Pullman.—A superior right second bicuspid. A disto-compound cavity. Cervical wall very sensitive, covered with a layer of gold and tin on account thereof. The remainder of the cavity filled with cohesive gold. A matrix was used. The filling was finished with a marble-like contact with a mesial face of posterior proximating tooth at such a point as to leave the V-shaped interdental space free for nature to fill with gum tissue.

Clinic, Dr. H. A. Costner, Chicago. *Patient*, Magnussen's "Dummy head." Superior right cuspid root. "A method of preparing and filling root canals with tin or gold points." The Doctor prefers this to other methods, claiming no disintegration of filling material, no irritation, hence no after effects.

Clinic, Dr. G. A. McMillen, Alton. *Patient*, dining-room waiter (colored), Leland Hotel. Lower right second molar. Large crown cavity. Filled with cylinders of tin—*hand pressure*—in the good old way. The operator fills suitable cavities with noncohesive gold in the same way.

Clinic, Dr. T. W. Prichett, Whitehall. "Insertion of an amalgam filling in an *ideal* place." No patient could be found.

Dr. J. W. Fisher, Bloomington, exhibited two bridges, one consisting of five teeth, the other of two. The former included superior incisors and left cuspid, being attached to three natural roots by cement; the other, including two superior incisors, being attached to one natural root, with lug at other end to be inserted into gold lined mortise in lateral incisor.

Dr. J. Campbell, Bloomington, exhibited models representing irregularities and method of rectifying.

Dr. J. A. Dunn, Chicago, exhibited hand matrix for plastic fillings. Superiority over fixed matrices allows a better adaptation of filling material to cervical margin. Also a buccal cheek-holder.

Dr. A. E. Matteson, Chicago, exhibited models representing

irregularities, as discussed Tuesday under the head of Orthodontia. Also torch made of a glass drop tube filled with cotton and saturated with alcohol.

Dr. E. J. Perry, Chicago, demonstrated a method of articulating crowns with models, etc.

Dr. Garrett Newkirk, Chicago, exhibited a set of scalers for removing calculus from the roots of teeth in cases of pyorrhœa.

Dr. D. O. M. LeCron, Rockford, demonstrated a method of attaching porcelain facings, bending the pins and using cement instead of soldering.

Dr. A. W. McCandless, Chicago, demonstrated a method of producing porcelain faced bicuspid on extracted roots with gutta-percha, drawings, etc. No patient found on which to demonstrate the method practically.

Dr. J. G. Harper, St. Louis, Mo., exhibited an electric fan, alternating current motor. Simplicity of construction and comparatively noiseless, are the points of superiority claimed. It can be attached, after removing the lamp, to any electric lighting current.

REPORT OF THE COMMITTEE ON DENTAL ART AND INVENTION.*

READ BY J. FRANK MARINER, D. D. S., CHICAGO, ILL.

We desire to call your attention to a new cement for setting crowns and bridge work. It is said to be superior to any heretofore used. The color will perhaps limit its use somewhat as a filling material, but where it can be used it has worn well.

In using, follow directions, particularly the one to rub vigorously until a smooth plasticity is obtained. It can be worked deliberately, yet hardens quickly under the influence of the heat of the mouth. Fillings that have been in the mouth one year show little, if any, sign of wear or disintegration. It is the oxyphosphate of copper cement, prepared by W. B. Ames, D. D. S., 34 Washington Street, Chicago.

We call attention to another filling material which is new, to some entirely unknown, *viz.*, aluminum amalgam, made and sold by the Carroll Aluminum Manufacturing Company, of Meadville, Pa. After some experience in its use, your Committee recommend it, and believe it worthy of trial. Although it may prove to be a

* Illinois State Dental Society.

snare and a delusion, so far we are pleased with it. It sets quickly, is without shrinkage, makes a strong, fine grained filling, has a beautiful white luster that has not yet tarnished or changed color in wear, and is less conspicuous than any other filling material

Another new filling material is aluminum foil, made by the same concern. The following is what the manufacturers say of it: "It is nonoxidizable and remains unchanged by the fluids of the mouth. It is easily and speedily packed, adapting itself perfectly to the tooth walls, making a compact, firm filling that takes temper in manipulation, and finishes with a hard, finely polished surface, is less conspicuous than gold, combining more desirable qualities as a tooth saving material than any other metallic filling." The committee can speak of this material with but limited knowledge, having seen it in use in but a single case. This case was in the mouth of a boy about fourteen years of age, whose teeth were of a poor quality, and badly decayed, defying usual means to preserve them. It has been in this mouth one year (other materials failed in much less time), without any perceptible change. Directions for use: Roll into ropes with foil crimpers, anneal at a low heat on a mica sheet, and fill as with soft gold.

After considerable correspondence with inventors and manufacturers of materials and appliances in which the dental profession is interested, we have received the following in circular form. Many of these articles have been brought into notice somewhat through the advertising medium of our journals, yet to many they are unknown, and to all are new, having been brought out or improved since April, 1891:

Ethyl Chloride, as an obtundent and local anæsthetic.

Cavity Stoppers, class A, B, C, D, E and F.

Porcelain Inlays, and Porcelain Inlay Rods.

The Kells' Electric System, adapting the electric current to dentists' uses: 1st. An electric motor, with magnetic clutch device for stop motion. 2d. A pedal switch for the control and direction of the current. 3d. A variable resistance to vary the current. No. 1. Kells' system for engine, mallet and mouth lamp. No. 2. Double resistance, for engine, mallet and mouth lamp, adapted to any single pulley engine head. No. 3. Double resistance for engine mallet and mouth lamp, adapted to the new cord engine. No. 4. Single resistance, for engine only, adapted to any

single pulley engine head. No. 5. Single resistance, for engine only, adapted to the Weber-Perry engine. Electric Mouth Illuminator and Electric Laboratory Lathe, and Kells' Adjustable Bracket Arm for Engines, and Electric Incandescent Lamps from $\frac{1}{2}$ to 50 C. P. These were completed and placed upon the market June. 2, 1891.

The Ideal Dental Base Plate. Plastic as wax, rigid as metal, fits like a glove, does not "crawl" from the cast, nor soften under the heat of the mouth. Held in boiling water for a few moments it softens, and can be moulded easily to fit the most minute inequalities of the cast. It hardens in a few minutes, and then is inferior in stiffness only to a metal plate of same thickness, retaining its shape unchangeably. When soft it is easily cut, when hard trims to any form with a file, even to a feather edge. June, 1891.

"Flexo" files, saws and strips, separating and plug-finishing files, saws for saw frames, files for saw frames, and finishing strips. They cut rapidly and smoothly, without dragging. Used wet, clean themselves. July, 1891.

Side-wheel Engine, improved August, 1891.

Improved Root Dryer. The improvement consists in a better means for fixing the probe in the bulb, probe passing through the bulb from the rear, and steel handle screwed in behind, locking it firmly. August, 1891.

A new set of Root Trimmers. This set is an enlargement and an improvement of the two trimmers formerly advertised under Dr. Evans' name. August, 1891.

Weston's Insoluble Cement, improved. The improvement consists in the best results being obtained when the filling is at once submerged in water as hot as the patient can bear, and kept there three or four minutes. August, 1891.

Bibulous Paper. A new, neat, and ingenious method of putting it up ready for use. August, 1891.

Spring-tempered Porte polisher, improved August, 1891.

Right and left elevators, devised by Dr. J. F. Canine, very efficient. October, 1891.

Rowe Disk Carrier. Special points of advantage are shown in its simplicity, ease and rapidity of adjustment. January, 1892.

Roberts' Cotton Pellet Roller. Any sized pellet can be made almost instantly. Being attached to the bracket table, the appliance is always at hand when wanted.

Improved Soldering Appliances, devised by Geo. W. Melotte, M. D. S., Ithaca, N. Y. A very complete outfit in this line, and has been greatly improved during the last few months.

The Brewer Universal Forceps, for rubber dam clamps, improved. The improvement consists in one appliance having the functions of two or three different forceps.

Improved Rubber Dam Clamps. The improvement consists in providing with holes all the forms which will admit of the change, adapting them to the Brewer Universal Forceps.

Root Clamps for Crown Work. Suggested by E. L. Hunter, D. D. S. Strictly speaking, these are not rubber dam clamps, but more properly adjusters of the dam to roots upon which crowns are to be fitted. When the dam is adjusted and ligature tied, the clamp is removed, leaving dam in position.

Crystal Mat Gold. A great deal of care and thoroughness has been exercised in the production of this new preparation. It has been tried by many experienced operators, and used at clinics in a large number of cases. The criticisms it has received have been almost uniformly favorable.

The Bosworth Universal Mallet. This mallet belongs to the automatic class. Its inventor claims that it is so constructed that with it, any tooth cavity, however difficult of access, may be filled. The blow is struck at an angle, with the plane of the handle. The lever spring, with which it is equipped, produces a sharp, quick blow, without vibration, the value of which is especially seen if filling weak and delicate teeth.

Dr. How's Heater for scientifically heating gutta-percha. Judging from the many overheated, and thereby ruined, gutta-percha fillings that are to be seen in nearly every mouth, we think this appliance should be found in every dental office in the land.

Dr. How's Pellet Pliers, Improved. The improvement consists in their being especially applicable to the new crystal or mat gold recently introduced.

Improved Dento-Electric Cautery. The principal Improvement consists in the introduction of a more efficient and convenient means of closing the circuit, also an increased length of handle modified to a more convenient form.

A new Blow Pipe polished and nickel-plated throughout. The gas inlet is placed in line with the air jet for convenience of attach-

ment with gas opening at back of workbench. The flame can be directed at any angle. The top lever when pushed backward, will turn the light out, and when drawn forward, will leave a small pilot light. Total height, $7\frac{1}{4}$ inches. Air can be supplied by the mouth, or by a foot blower.

A gold pointed probe, wood handle, hexagon ferrule, to elevate point and prevent rolling on the table, 18k. gold point, not affected by iodine, acids, etc.

Rubber mounted Arkansas Stones, very neat and tasty ; also a new waxing burner, which is unique.

We wish to call your attention to an appliance, though not new to some, to many others may be entirely so. It is the Bonwill Articulator. The object of the committee in bringing this appliance to your notice is the fact, that it has never been appreciated as it deserves. It is exceedingly simple, easily adjusted with extra loops or bows, any number of cases can be articulated with same appliance. Speaks for itself more eloquently than we can praise it.

Also an appliance presented by Dr. John G. Harper, of St. Louis, for "keeping cool" during extreme hot weather, *viz.*: The Meston Alternating Current Motor Fan." The new model of 1892 is very complete. It can be used wherever the alternating current is used, can be placed in any part of the room, and moved at pleasure. Connects directly to socket of your incandescent lights. It is not a toy, but perfectly built, strong, durable, and a handsomely finished machine, and costs from one to two cents per hour to run it, furnishing a great deal of comfort to the operator. Commanding a cool and refreshing breeze, when most needed.

Any information relating to its mechanism, capacity, price, etc., can be obtained from Dr. Harper, or "The Meston Electric Manufacturing Co., St. Louis, Mo."

A very useful appliance is a new flask press, which on account of its simplicity is superior to the more complicated forms. It will speak for itself.

The most conspicuously original paper of the year pertaining to dental prosthesis is that of Dr. Grant Molyneaux, of Cincinnati, in which he describes the construction of the modification of the Suersen appliance for the mechanical treatment of cleft palate. By personal observation we are convinced that this is the most practical method of treating this lesion, and consider the modifi-

cations made by Dr. Molyneaux to be a valuable improvement on the original method. The above paper appeared in full in the April 1892 number of the DENTAL REVIEW.

J. F. MARINER, *Chairman*,

W. B. AMES,

E. H. ALLEN, *Committee*.

REPORT OF COMMITTEE ON DENTAL SCIENCE AND LITERATURE.

READ BY EDMUND NOYES, D. D. S., CHICAGO, ILL.

The volume of periodical literature has been increasing in late years. Most of the journals are larger, and several of them frequently issue single numbers greatly enlarged from their usual standard for the purpose of promptly publishing the transactions of some society. It is to be noticed particularly also that it is no longer possible to get everything of value that is published by taking one good journal, for there is less copying than formerly of original articles from one journal to another; and the custom is growing of dividing up the reporting of society proceedings so that different journals report different societies. The American Dental Association, the National Association of Dental Faculties, and the National Association of Dental Examiners, furnish proper exceptions to this rule, and all the larger journals publish reports of their proceedings. The contents of the different journals is not now duplicated to a sufficient amount to enable any intelligent practitioner to get along without taking several of the best ones.

In relation to operative dentistry the series of articles by our Dr. G. V. Black, in the *Dental Cosmos*, on "The Management of the Enamel Margins," deserves special mention. The clear, orderly and scientific presentation, in full detail, of such a subject as this is a great benefit to the profession and likely to modify for the better in greater or less degree the practice of almost all who read the articles. It is to be remembered that we have nothing worthy to be called a text-book on operative dentistry, and occasional chapters like these, which are suitable material for such a work, are very welcome. The series of articles by Dr. Ottolengui, of New York, on "Methods of Filling Teeth," are a more extended series than have lately appeared in any of the journals upon the subject. They are worth careful reading.

* Illinois State Dental Society.

The paper by Dr. E. A. Stebbins before the American Dental Association upon the use of nitrate of silver for the arrest of caries in certain cases deserves attention and such trial of the practice as may determine the scope and usefulness of its application. It promises to be of great value for children's teeth. Dr. Talbot has made several additions to his already considerable contributions to the subject of deformities of the mouth and jaws, and Dr. Angle one on the forcible eruption of teeth, Dr. Whitefield one on "Pathological conditions produced by galvanic action between dissimilar metals used in the treatment of caries of the teeth." But one needs to make only a very cursory examination of the contents of the journals to find how futile any attempt would be to enumerate the articles of special value, unless a large part of their contents were listed, and to discriminate what is new or original, or what marks distinct advance over previous knowledge or practice, is still more difficult and requires a fuller acquaintance with the past as well as the current literature than most of us possess. It is not possible either, in a short report, to give such a summary of what has been said and done in the profession as may in the last degree supply the place of a regular and reasonably thorough reading of the journals. Such an attempt requires a volume at least as large as *Catching's Compendium*, which might, perhaps, be considered as having removed the necessity for any such committee as the present one, and which is warmly commended to all practitioners, whether they take all the journals from which it is compiled or not, but with the warning that some of the most important articles in the journals do not appear to admit of the kind of boiling down that would prepare them for that work. The articles on enamel margins, and on filling teeth, before mentioned, Miller's articles on elephants' tusks, on diffusion of antiseptics, and on the mouth as a focus of infection, those by Heitzmann and Abbott and very many others are examples.

The subject of dental education considered in its relations to the colleges, the State Boards of Examiners, the Association of Faculties, the profession, and the public, is one of the problems under active discussion by the profession, and far from being settled. This is not the place for any consideration of the subject except to say that it is time to lay aside much of the apparent jealousy and antagonism which have characterized some of the discussions, and to give careful and good tempered expression to

the great diversity of views that are prevalent, seeking with patience and good nature to bring about such agreement among all good men as may establish a policy calculated to secure the best results at present attainable. The most important thing just at present in this relation is the arrival of the time for the requirement of three full courses of lectures in the dental colleges before graduation. This most important step in advance will be watched with great interest by everybody in the profession. It is yet to be seen how much open or concealed opposition to it may be developed, or how much evasion of it may be practiced. It is most earnestly to be hoped that all of the colleges having the least pretensions to reputability, and the entire number of respectable practitioners will cordially and fully uphold and enforce this position.

The portion of the report on histology and on electrical apparatus, etc., has been written by Dr. T. L. Gilmer, as follows:

Three articles of histological interest relating to the teeth and approximate tissue have come to the notice of this committee during the year. One by John Humphries, L. D. S., F. R. S., England, relating to the development of the teeth. Another by A. Hopewell Smith, M. R. C. S., L. R. C. P., L. D. S., England, on the Patho-histological Conditions of the Dental Pulp. The other is an extensive writing by Mr. Mummery, of London, England, on the Soft and Hard Tissues of the Teeth. The latter appeared in the *Journal of the British Dental Association*, and later in pamphlet form. Any one of these articles is worthy the attention of the student in dentistry.

In dentistry and medicine there has been a growing demand for some means of adopting the Edison or incandescent system of electricity to the various needs of these professions. The current has been available and easily controlled for certain purposes, but seriously deficient for others, *viz.*, for actual cautery, and for electrolytic use. The voltage of the incandescent system is high, 110, while the ampereage is very low. For cautery and other work just the reverse condition is demanded, *i. e.*, low voltage and high ampereage, small force but great quantity.

Much time and expense have been devoted to this subject, and we have a number of times been informed that successful results had been reached, but after a fair trial they have not proven satisfactory.

During the last year Dr. J. L. Gish, of Jackson, Mich., has

seemingly succeeded in this direction. The writer has seen the improved Gish apparatus, and is convinced that it will do the work claimed for it. He has three different appliances, one especially adapted to the uses of the dentist, another for heavy cautery work, and a third for electrolytic work. The appliance adapted to the uses of the dentist may be employed for the controlling of the current for motor, hot blast, and mouth lamp; and for actual cautery purposes if the wire is No. 25, or smaller. For heavier cautery work the cautery apparatus must be employed. The cost of the apparatus for dentists' use is \$45.00, and is procurable from Messrs. Chas. Truax, Greene & Co., Chicago.

The report on books has been prepared by Dr. A. W. Harlan as follows:

From the date of the last meeting of this society to the present time more than two hundred pamphlets and books have been published in different languages on dental topics. This does not include new editions of works already in print. In order to present to the society that which would be valuable for members to read it would have been necessary for the committee to employ at least three translators and one stenographer for four months and twenty days of eight hours each. As this was an impossibility on account of lack of funds the committee has not attempted to even outline what should be read by the busy dentist. Matter that is useful for one mind is not suitable for another, and to attempt to lay down for you a recommendation as to the reading or study of books or magazine articles would be considered a presumption on our part. The committee has no hesitancy in calling attention to an article by Dr. G. V. Black on "The Use of Books," published in the February number of the *DENTAL REVIEW*. Dr. Talbot's charts of the typical forms of irregularities is a book which may prove of great value to the student interested in the subject of orthodontia. Catching's Compendium is for the busy practitioner just what its name implies, a resumé of the best articles published in the dental journals. During the year no new work has appeared on any of the following subjects: Operative Dentistry, Dental Chemistry, Dental Pathology, Mechanical Dentistry, Crown or Bridgework, or in fact on any subject in which the practical dentist would be interested. The committee are of the opinion, that the merit of an annual report on any subject consists largely of the force or originality of the individual making the report; in fact, if

a good report is to be made on science or literature some one should be appointed to do the work and present it over his own signature. In this manner he would receive credit for the work. Three new dental periodicals have been established in the world during the year, but none of them equal those previously in existence. One has already died. One journal, the *Archives of Dentistry*, has suspended publication. What is most needed at the present time is a good quarterly journal of about 600 pages annually, which could be sold at \$5 per annum, filled with nothing but original matter, and edited by a competent literary dentist, and published by a house selling dental goods or a syndicate of dentists able to pay for contributions at \$5 per page. In addition to this some one should start a weekly dental journal of sixteen or twenty-four pages in a central location, so that dentists could be kept *an courant* with dental news as it transpires and not get matter so old that they will not read it when it comes once per month. If two journals of this nature could be established we think they would pay from the start. The weekly could be sold for \$3 per year, and if ten thousand dentists would subscribe there would be such an awakening of literary activity as has not been seen for some time past.

THE EXSECTION OF NERVES.

By T. W. BROPHY, M. D., D. D. S., CHICAGO, ILL.

The neuroma or nerve tumor is usually connected with the nerve sheath. It may be of the nerve itself, but not frequently so. The substance of the tumor is fibrous; it is generally rounded or oval and varies in size from the most minute enlargement to a large orange. It is usually benign in its character and it gives inconvenience only by the pressure it exerts on the neighboring parts.

It is sometimes free from pain; in other cases it is exceedingly sensitive to the touch. The results of their presence are dependent upon their location and the relation they bear to the nerve tissue with which they are connected. If located at the foraminæ through which the nerves make their exit, the pain, in consequence of pressure upon the bony walls, is frequently very severe. Medicinal agents may afford temporary relief, but exsection of the affected nerve is the only reliable treatment.

Neuralgias may be dependent upon an anæmic or impoverished condition of the system. True neuroses are not amenable to surgical treatment. The terminal branches of the trigeminal nerves, the diseases of which come within the domain of oral surgery, in consequence of their situation and exposure to external violence, frequently become the seat of diseases which call for surgical treatment.

It is not my purpose to enter into detail on diseases of the fifth pair of nerves, it will be sufficient to say that nerve lesions occurring in subjects of gout, rheumatism, malaria, lead poisoning, syphilis, etc., call for treatment of a nature to meet the requirements of each case.

Neuromata are classified as constitutional and traumatic. Nerve tumors constitutional in their origin usually affect the whole of a particular group of nerves, and these tumors, as in muscular or other tissues, may be malignant or benign.

Traumatisms which lead to the formation of nerve tumors situated upon the supraorbital, infraorbital and inferior dental and gustatory nerves are, especially with the three former, of very frequent occurrence. The method of procedure in exposing the first division as well as the second and third should be such as to cause no visible scar. The first branch should be reached by making an incision beneath the supraorbital ridge and just beneath and close to the eyebrow. When the integument has been divided it should be reflected upward so as to enable the operator to expose the nerve through the upper fibers of the orbicular or palpebrarum muscle. This exposure may be easily accomplished and the nerve seized by a tenaculum or forcep and a section excised from it.

The operation for exsection of the infraorbital nerve simultaneously proposed by the late Professors Parkes, of Chicago, and Hodgen, of St. Louis, commends itself as highly meritorious.

It consists in making an incision beneath the lower eyelid, and thus entering the orbit and lifting the eye so as to reach the nerve as it dips down from the floor of the orbit to pass through the canal and makes its exit at the infraorbital foramen. When the nerve is exposed it may be lifted and divided, after which the tissues at the incision beneath the eye may be depressed so as to expose the infraorbital foramen, and the nerve may be seized by the forcep drawn from the canal and the section thus removed.

Abnormalities of the third division are more frequently met

with than they are in the first and second divisions, owing principally to greater exposure of the terminal branches as they make their exit from the mental foramen. Neuromata occurring along the course of this branch very frequently call for surgical treatment.

I have no doubt that diseases of the teeth are responsible for the presence of nerve tumors, especially so in relation with the inferior dental nerve. My experience has convinced me that neuromata in edentulous jaws are not infrequently due to irritation of the nerve at its exit from the mental foramen caused by a lower denture. More especially is this true in the aged.

The anatomical changes which occur in the lower jaw from youth to old age are well known. It is sufficient for our purposes to remind you that the aged edentulous jaw has no alveolar processes and no gum tissue and becomes nearly flat upon its superior surface; it is covered only by the periosteum and mucous membrane, and the mental foramen, instead of occupying the place it formerly did, midway between the superior and inferior borders of the bone, is now on its superior surface. In such cases, the finger passed over the upper border of the jaw will distinctly feel the inferior dental nerve as it passes from the mental foramen. A lower denture adjusted in such a case will surely exert undue pressure upon the nerve and cause great discomfort to the patient. So painful indeed is it in many cases that the plate is abandoned.

The irritation of the nerve thus established often leads to the formation of neuromata. If the denture were constructed saddle-shaped it would not press upon the nerve and no injury would ensue. Exsection of the inferior dental nerve should invariably be made within the mouth.

I have never found it necessary to make an external incision in performing this operation, and I see no reason why external incisions should be made.

Any mouth which will admit of access to the second molar tooth for the insertion of a filling will allow abundant room for the performance of the operation in question.

In performing neurectomy upon the inferior dental nerve the operator should remove all that portion of the nerve situated in the inferior dental canal.

This may be accomplished in two ways: 1st, by separating the nerve from its branches at the mental foramen and then by the use

of a tenaculum take up the nerve as it enters the inferior dental foramen (at this point it is only submucous) and draw it from its canal after which it may be excised. 2d, The operation which I prefer is to expose the mental foramen and by the use of a flame shaped bur cut away the buccal wall of the canal thus exposing the nerve nearly as far back as the ramus of the jaw; the nerve may then be drawn forward far enough to enable the operator to excise it and remove all that portion which lies within the canal.

To prevent its reproduction I have after removing it made use of a bur and thoroughly removed the inner walls of the canal, which procedure has happily terminated in the formation of an exudate which in turn ossifies and permanently closes the inferior dental canal and thereby renders the reproduction of the nerve impossible.

PROCEEDINGS OF SOCIETIES.

ILLINOIS STATE DENTAL SOCIETY.

(Continued from page 513.)

Discussion of Dr. Case's paper on "Orthodontia" (*see page 531*).

DR. J. J. R. PATRICK: Mr. President—When I came here I did not expect to be called upon to open the discussion on "Orthodontia" or I should have brought with me a couple of models similar to the ones exhibited by Dr. Case. The appliances for regulating the teeth are more numerous than the teeth themselves. Some years ago, after studying the different appliances that had been in use during the last two hundred years, I conceived the idea of constructing an appliance that would be universal in its application, without the use of plates or the phosphates to retain it in place. An appliance that could be removed, cleansed, and put back in a few minutes. There is a cut and description of the appliance in Dr. Guilford's work on "Orthodontia." There is nothing new in the appliance, with the exception that it is a combination of all that has been used before; and the use of plates and cements are dispensed with. But since we are on the subject, I will make a few remarks as to the origin or cause of this class of deformity—that is protrusion or anteversion of the teeth of the superior maxillary.

Anteversion of the teeth of the superior maxillary never occurs with the deciduous set but is confined to the region occupied by the succedaneous teeth. In the majority of such cases the fault exists in the inferior maxillary; the horizontal ramus being too short, and the angle of the ascending ramus too acute; the lateral excursion is limited, but the movement from the posterior to the anterior is often almost equal to the rodents. The condyles of the jaw in such persons can be slipped forward in the glenoid fossa, which becomes elongated to the anterior, changing the form and reducing the articular eminence by co-relation. This anterior excursion of the jaw is accomplished with rapidity and without inconvenience. Whenever the lower jaw presents this conformation the upper has all the appearance of anteversion, which is, however, more apparent than real. A case in point to which I desire to call your attention (exhibiting the models), will illustrate this character of deformity: Both jaws are laterally constricted, so that the occlusion of the molar teeth is fair and could not be much improved, the lower anterior six teeth close inside the upper at least one-half inch when the molars antagonize. I removed the first superior bicuspid right and left, and then waited two months to allow time for the formation of new bone in the root cells of the process from which the teeth were extracted. I then attached my appliance to the first molars, the bow spring embracing the anterior teeth, and by the aid of the buckle screws drew the bow spring to the posterior, drawing the anterior teeth with it, gradually from day to day. The operation produced no pain, the first molars to which the appliance was attached remained firm, from the fact that a very small amount of force was used at one time, but the force was persistent and renewed from day to day without causing inconvenience. In the course of four months the anterior teeth were moved back evenly and compactly until the two cuspid teeth rested against the second bicuspid, closing the space produced by the extraction of the first bicuspid. In this condition the appliance was allowed to remain for two months, it was then removed and remained off for one month, at the expiration of that time the anterior teeth had moved forward about two lines. The appliance was again adjusted and the teeth screwed back and retained in place for three months and then removed. One month later I examined the mouth and finding the teeth had not moved forward the patient was dismissed.

DR. BROPHY: I would like to ask Dr. Patrick if the arch corresponds with the teeth below?

DR. PATRICK: My experience is, that in all deformities such as I have attempted to describe, the lower jaw is more in fault than the upper, the deformity in the upper is brought about by co-relation by the movements of the lower upon the stationary upper, and as a consequence the arches do not correspond nor can they be made to do so. It is an easy matter to move teeth back to a natural or more seemly position, but where the malposition has been produced by the action of a deformed lower jaw, it becomes exceedingly difficult to retain them in their new position.

DR. L. L. DAVIS: Don't you find trouble in attaching to the first molar by its tendency to move forward?

DR. PATRICK: The first molar is the first tooth of the permanent set to develop, it is the largest and strongest of the permanent series and is in actual use longer than any other tooth, it is therefore the most desirable tooth for anchorage. The cause of the trouble experienced by operators in displacing the first molar, is in the operator and not in the molar; operators are as a rule impatient of results; they expect to correct a deformity in a few weeks that it has taken years to produce.

DR. H. J. MCKELLOPS: These cases are interesting to every one of us, and I am glad to see so much attention paid to them. I do not suppose there is a dentist within the sound of my voice who does not have from time to time some of this kind of work to do. I have taken a great deal of interest in this work, and the more we can simplify the appliances, the better it will be for us.

When I was attending the Southern Dental Association in New Orleans, Dr. B. S. Byrnes, of Memphis, not only brought all of his impressions down there, but the patient, to show what had been the result of his work. Since that time I have had three cases of pushing back of the upper teeth, and in one case they were separated so that a lateral incisor could have been placed between the front teeth. The little girl was fifteen years of age. In one of the cases the lip was drawn close under the nose so that it was impossible to close the lips. Byrnes appliance is very simple for the correction of these irregularities, and that is what we want to get at, to do things so that every man can do them. I am sorry I did not bring some of the bands with me. After you get the model study your case, fit the band to the molar and the cuspid. The

first motion is to move the cuspid, which is more stubborn than any other tooth to move and takes more pressure to start it. Placing a little rubber between it and the lateral (the first bicuspid being out) causes it to yield more readily. Place a gold band around the first molar and the cuspid—with a pair of pliers prepared for that purpose—crimp the gold a little every day. This brings the cuspid back to the second bicuspid. When this is accomplished I then attach a band around the anterior teeth and crimp that also every day until I bring them back into position.

A MEMBER: What gauge of gold do you use?

DR. McKELLOPS: About No. 30. Gentlemen, I assure you that this method is worth trying. If you had seen the models and the patients to whom I have applied this method, you would think very much more about it. I had Dr. Byrnes come to St. Louis to show this thing.

In bringing the two front teeth together, I take a fine gold band, put it around them, and start them in the same manner. As soon as I get these together I put my band around, commence my crimping on each side so that the child never feels any pressure or inconvenience.

Still, with ever so little discomfort, they will take it out, throw it out, or drop it on the street, and worry the soul out of a man in trying to keep it in the mouth. This takes time, as Dr. Patrick has said. It takes at least a year or fifteen months before you can get the mouth in a perfect condition. It requires patience and time to accomplish it, and you should value your services accordingly.

DR. A. E. MATTESON: Is not that method more applicable to young than older patients?

DR. McKELLOPS: I think it as applicable to both.

DR. H. A. COSTNER: Would not rubber bands do as well?

DR. McKELLOPS: No.

DR. COSTNER: Why?

DR. McKELLOPS: Because there is too much pressure all the time. Rubber bands would cause irritation, and with the crimping process there is very little pressure. You can have a screw put on the side, and with it you can tighten the band a little every day. If you apply rubber bands you will have constant irritation.

DR. J. H. WOOLEY: What objection is there to cementing on the band so that it will remain?

DR. MCKELLOPS: I want to teach patients cleanliness, to get rid of the dirt and microbes that are in the mouth and to keep the plates and everything else in the mouth clean.

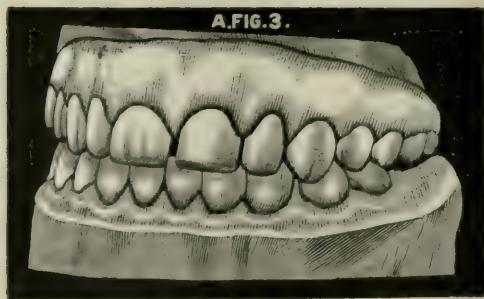
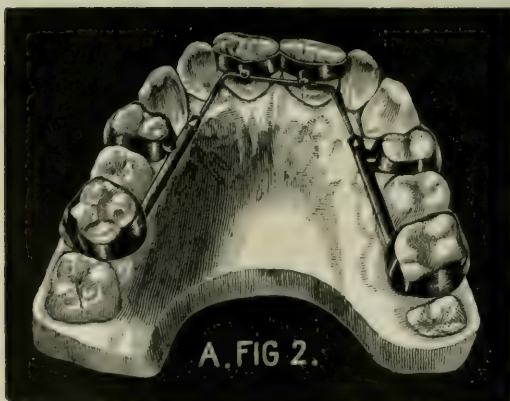
DR. E. D. SWAIN: Mr. President, any method of accomplishing the difficult operations that are presented to us is of course of interest to us all. About ten months ago a young patient was brought to my office presenting nearly the same conditions as explained by Dr. Case, of the lateral incisors striking the gum margin at the necks of the superior central incisors; in fact, the lower incisors left quite a mark in the soft tissues. The patient was fourteen years old. I recognized the fact that nothing could be done until the lower incisors were removed in some manner, from producing pressure on the superior incisors. I simply took advantage of the well-known fact that at that age if pressure is removed from molars and bicuspidis they will elongate of their own accord. I capped the molars and much to my gratification the bicuspidis in about four months were in antagonism, they had elongated sufficiently to take up the distance which the teeth were thrown by the caps above the molars. I removed the caps. When I saw my case some two weeks ago the molars and bicuspidis were in antagonism, and the points of the lower incisors were at least the twelfth of an inch from the palate, and one-fourth of an inch from this point (illustrating) to the rear. I am now ready to put on my appliance to bring the superior incisors back to their place. There is space enough in this case between the upper incisors, that is, the anterior teeth, to allow of their being brought back in the proper position without extraction.

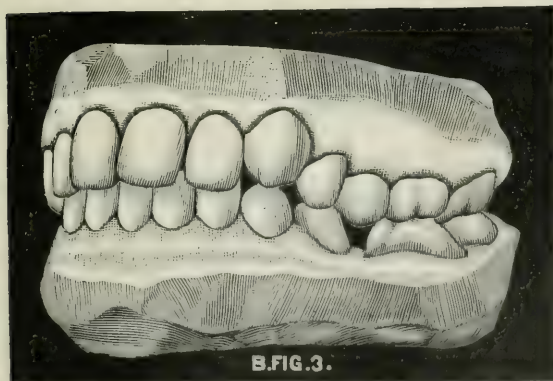
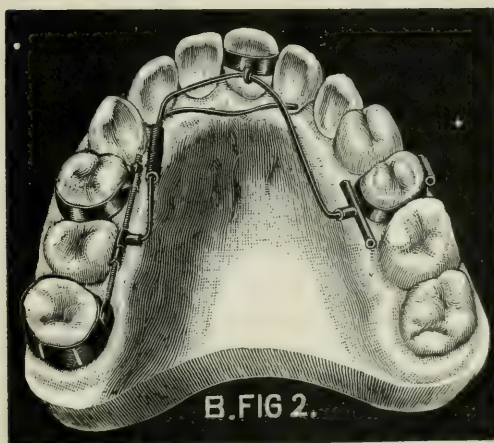
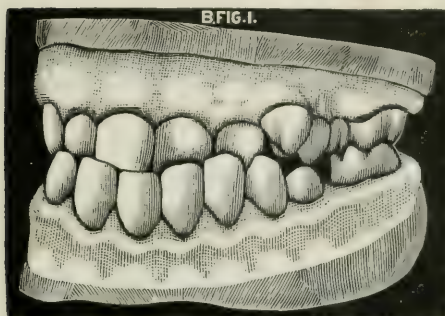
DR. A. E. MATTESON: I have two cases of irregularity which I had under my care early this spring. One of them was a young lady, eighteen years of age. The central incisors were occluded just inside of the lower as represented in A, Figs. 1 and 2. The appliance used is simple, as you will see, and rather after that of Dr. Angle's system. After using and turning the screw, the teeth were brought forward, they had been worn so short it was necessary to elongate them. All that I did was to use the same appliance by bending the wire toward the cutting edge, the spring of it drew the teeth down. A, Fig. 3, shows the case a month after the appliance had been taken off. The appliance was worn six weeks.

The other case (B, Figs. 1, 2, 3,) was that of a boy aged thirteen

years, with the left central and lateral incisors occluding within the lower teeth—the bicuspid standing within the arch—nearly their width—and the left second bicuspid twisted fully 45° and the whole arch contracted.

The management was as follows:





The first right molar and first right bicuspid were banded. On the lingual side of the bicuspid was soldered a short tube. One end of screw-cut German silver wire (No. 20 gauge) was soldered to the band on the molar—the other end passing through the tube on the bicuspid band.

On this wire screw between the bands, was placed first a nut then a T tube and in front of the T tube and of the band of bicuspid another nut.

The left central was banded with "gold platina" plate with a lug on the lingual surface.

The left second bicuspid was banded and a short tube on the buccal, and a long T tube on the lingual surfaces, was soldered transversely.

Schomacher gold-plated piano wire (No. 16 gauge) was formed, the ends passing into the openings of the T tubes and in contact with the central incisor above the lugs.

This piano wire was supplemented with another (No. 14) and united by winding with fine wire and soft solder. The free end of this wire (No. 14) forced out the lateral.

The second bicuspid was rotated by changing the angle of the piano wire where it entered the tube of the left bicuspid.

By turning the nut which is back of the loose T tube forward the pressure was brought against the central and lateral. This also permitted the adjustment of the expansion of the arch either in the region of the molar or bicuspid. The nut in front of the screw was used to draw the first bicuspid back.

The tube on the buccal surface of the left bicuspid band was to lock, when in position with a pin.

The long tube on the inside of this band was to support it with the contingency of cutting a thread on this end of the piano wire, and with a nut, form a jackscrew to assist in forcing the incisors, although the necessity for this did not arise. This piano wire which I have mentioned is superior to any which I have used. It might be improved by a heavier plating. It can be obtained larger than I have mentioned but I have found No. 16 sufficient to expand the arch of any case so far since commencing its use.

In regard to making these nuts for irregularity cases, having found that cutting them out of solid nickel and German silver plate, to be drilled, tapped and squared, a very tedious process, I have simplified the method greatly by first *drawing* tubes of platinized

silver (one part platinum and two parts silver), soldering the joint with 20 k gold, then drawing through a "square hole" draw plate, inserting piano wire in the tube, thus making a square tube with a round hole, then sawing off enough for a nut.

In regard to the use of plates or bands not cemented on the teeth, I must differ with my friends, Drs. McKellops and Patrick. *I have no use for appliances which are not fixed*; patients *will* take them out and the next morning they cannot get them back. I know of few more perplexing positions than to have a "kid" come into my office with plate in his hand and my time for the day engaged.

Discussion of Dr. Weeks' paper, entitled "The Enamel at the Gingival Line." (Paper to be published in the August number).

DR. G. V. BLACK: Mr. President and gentlemen, there is not much for me to say upon this subject in the way of discussion. You have had an illustrated lecture on dental anatomy in its relation to the placing of gold crowns, or collars, upon the stumps of teeth. It is, so far as I know, the first clear elucidation of this subject that has been given before this, or any other society, in which the actual anatomy as it exists has been displayed so that it could be readily seen and understood. Of course, this subject has been explained through dissections of the teeth before, but not thrown upon the screen in this way so that a whole audience can see it at once, and our thanks are due to Dr. Weeks for his entertaining lecture. It is another object lesson in the further study of dental anatomy, a subject, I am sorry to say, that has been most wonderfully neglected in the practice of dentistry. When I look back over the history of the practice of dentistry, I sometimes feel amazed that this subject has been so long and so much neglected; for we find every point in the anatomy of a tooth, even in the external form, markings of the external surface, and the relations of its different tissues becomes important to us in our operations. Some of our operations touch upon every point of the anatomy of the tooth, and it is necessary that the anatomy, external and internal, be well understood so that when we look at a tooth we know all about it.

Dr. C. S. CASE: I am glad to have an opportunity to see the pictures exhibited before us, giving a perfect outline of the anatomical shape of the enamel, its gradual thickening, and its relation

to the gingival border, viewed with the idea of using it as a guide in the construction of artificial crowns. It convinces me that the profession is gradually, if not rapidly, progressing to an appreciation of that which must come in the operation of crown work, *viz.*: that the border line where the band joins the root will in time be taken just the same care of in regard to finish and perfection at the joint as it is to-day at the cervical border of gold fillings; and until that time comes, until men are willing, are skillful enough, if you please, to use the proper amount of time and skill for the perfection of that joint, just so long will we have the same exhibition before dental societies relative to differences of opinion in regard to crown and bridge work as we have had this afternoon. The difference between operations of crown and bridge work by different men is just the same as the difference that exists between men. The skillful man who is capable of doing work properly will be successful. The man who expects to put on something that will do as an apology for the purpose of making money will fail, and that will always exist among dentists.

Relative to the border line of the enamel, I was pleased to hear Dr. Weeks emphasize strongly some of the points that I endeavored to make in a paper read before the First District Dental Society, of New York City, last winter. If any of you read that paper—it was printed in the *Dental Cosmos*—you are aware that I was severely criticized with regard to some things that I said. I believe it quite desirable, in the first place, to use a material for bands that is thin enough and soft enough so that one may be able to burnish it to perfectly fit the root of a tooth; and that the border of the band be smooth and finished after the work is done. It should also take its proper relative position to the gum-line; extending under the free margin only so far as to prevent food from lodging along the border of the band. That is not always possible if we follow the original position of the natural border of the enamel of a tooth, as shown by the pictures, because in many instances where we crown teeth the gums are absorbed far beyond the position of the border of the enamel; and I consider it important that the border of the gold should follow a relative distance under the free margin of the gum rather than follow always the line of the enamel. Still, if the gum has not receded and is in its normal condition, there could be no better place to put the

border of a band than exactly where the border of the enamel came.

In regard to the removal of enamel and the instruments used for that purpose, you are all aware, as has been suggested here, that it is quite difficult to remove enamel in large portions that is not first disintegrated; whereas, if its integrity is first broken by a proper instrument, it will readily chip away. I find that the instrument for this purpose should be intensely hard, as hard as steel can be tempered. That is the *important* feature in regard to an instrument for removing enamel in the same way that it is important to have a diamond for cutting glass. The diamond does not cut into the glass, it passes over it; and simply because it is so much harder than glass it cracks the surface and sends a crevice far beneath into the brittle substance. If the sharp point of an intensely hard instrument is drawn over the surface of enamel in the same way it will crack and disintegrate it; then the side or blade of the instrument can be turned on the enamel and there will be no difficulty in removing it. Some instruments made with this idea will soon be manufactured.

DR. J. G. DICKSON: That it should be necessary to discuss a question like this is a source of never-ending surprise and wonder to me. Those of you who received your first lesson in dentistry twenty or twenty-five years ago, will remember that there was a fundamental principle that underlay the whole question and involved this: In proportion as teeth need treating, conservative treatment should be applied. If a tooth requires to be filled, the joint must be so perfect as to hermetically seal the cavity. What would you think of a man going into a canning establishment and arguing for the hermetical sealing of fruit? Here we are discussing the proposition of hermetically sealing up a tooth that is impaired, by whatever process of nature, it matters not. It appears as if the profession did not know that these things were agitated in years gone by. Of course, where you seal up the stump of a tooth you do it so as to render it impervious to the products of heat, moisture, and atmosphere, you produce as natural a condition as possible. Will you do it with cement? You cannot do it with cement. You must do it with metal, something that is indestructible under the conditions which produced the caries or impaired its better condition. And so I say it is a source of wonder to me and astonishment that a liberal profession,

and one claiming foundation in exact science, should go back and touch up the question of perfect joints in the crowning process.

DR. NOYES: I fear Dr. Dickson has been laboring under a slight misapprehension. We have not been discussing the subject of which he speaks exactly. Nobody ever questioned that crown bands should fit well, but we all recognize the fact that it is not always a perfectly easy thing to do, and these discussions relate to the necessity of doing it, and to the conditions, relations and methods of accomplishing it perfectly.

DR. CASE: I am glad Dr. Noyes has awakened me to that particular point. I meant to express myself a little more fully. When I was on the floor before, I neglected to say a word in regard to the border of the band. I endeavor to have it thin at the edge, then gradually thicken if possible in the same way that the enamel thickens. I do not always succeed in bringing out a thickening of the metal in the same way that Dr. Weeks suggests in following the line of the enamel surface, but I always endeavor to follow the contour of natural forms in making crowns, believing we can have no better guide if we wish to arrive at the most perfect results.

DR. WILLIAM CONRAD: I would like to ask Dr. Black if the restoring of the contour of a band in a porcelain face crown is a theoretical or clinical necessity.

DR. BLACK: I think it is both a theoretical and clinical necessity.

DR. CONRAD: I see I understand the gentleman correctly, but fearing that I might not have done so, I asked the question.

In quite a number of years experience in constructing the various kinds of band crowns, I have not met with the necessity of increasing the thickness of bands for porcelain face crowns, nor going to the extreme our friend Dr. Weeks represents upon the screen. It is my experience if the edge of the band comes in contact with the root nearest to the process, and this portion of the band being smooth and thin it matters not whether the band is contoured to the original outline of the enamel or not. If you will watch your cases for a sufficient length of time I believe you will see I am correct. The slight difference in thickness given to the band in an effort to contour it will have no effect upon the perfectness of the work when compared with the cases where no effort has been made in that direction, provided the band fits the root equally in both cases and the edge that comes next to the process

is smooth and thin. In my practice I never use for bands gold thicker than No. 30. I desire to say a word in connection with that portion of the subject spoken of by Dr. Weeks and represented upon the screen, where he insists upon following the festoon of the gum where you place a band upon the root in the most extreme cases. If you place a band upon a root that is straight across, without regard to the festoon, and leave it there for a while, nature will protect itself at that point, and I believe in such cases you will have a much more secure fit. I do not think you will have as good a case if you try to follow the festoon of the gums, and if you try it in an extreme case you will have a defect rather than a benefit as the result.

In reference to the removal of the enamel, if you cut that portion of the enamel in a perpendicular rather than in a horizontal direction you will find it can be removed more easily.

DR. WEEKS: What advantage is there in using a straight band in festooning and inviting absorption of the process which we must have at that point? I would like also to ask Dr. Conrad if he has such a physical condition in his patients as will insure a perfect action of the absorbents and the restoration of tissue?

DR. CONRAD: Clinically I have had to use a much straighter band than I would use if I tried to follow out the original festoon as marked. We are dealing with cases where the original festoon will lose its outline in time. I find that if you do not try to follow the festoon too closely you will have a more secure tooth and better results will follow. The reason I use a straighter band is because I get a better and tighter fit, and that is what we want in crown work.

In regard to the other question asked by Dr. Weeks, I have no special physical conditions in my patients, other than that which is present in all mouths, when roots need crowning. The conservatism of nature is such, she will help us out of many difficulties, provided we give her a chance. Take time and the absorbents will act properly, and the restoration of tissue will not be hindered to the disadvantage of the work on hand. Nature takes care of these things kindly, unless there is a complete absorption.

Discussion of Dr. Newkirk's paper on "Antiseptic Dentistry," (see page 537). *

DR. J. G. REID: This subject has been elucidated in such a manner that no member of the society can be mistaken as to what is meant

by antiseptic dentistry. The author of the paper has told us how to practice it, but he mentioned nothing about practicing antiseptic dentistry from a medical standpoint. That is the fault of many papers that have been read, they merely allude to it, but do not explain to our satisfaction how they would and ought to do it. One thing regarding the mechanical treatment of antiseptic dentistry is, that the "teapot" is not exactly strong enough to do what it ought to. As I understand it, boiling water does not destroy germs. It may destroy some germs, but it does not destroy the spores of germs.

If we could arrange some kind of a receptacle by which we could get heated steam, we could not get anything better as an antiseptic agent, because it is an absolute disinfectant, but I hardly think that boiling water of itself is an absolute disinfectant. It has been stated that if dentists take an instrument and dip it into some antiseptic agent, it will destroy germs. It will not do it. We may take the strongest agent we have, for instance bichloride of mercury, dip an instrument into it, then wipe it, and we would have to do this at once, because the solution would affect the instrument, but at the same time this would not destroy septic matter. I speak of this as an illustration. It requires some little time for the action of these agents. If we expect to destroy diseased germs by medicinal agents, we have to keep our instruments in those agents continually. That is not always a convenient thing to do, but it is the proper thing to do. Water will answer the same purpose exactly. We may take a broach from a pulp canal, use it for a while, lay it down on the operating table, let it remain five minutes and it becomes dry; dip it into some water, wipe it off, and then put it away. A good many call that cleanliness. We might as well have laid the instrument aside as used originally as to have done that. What I wish to impress upon you is this, that we should go beyond what the essayist has recommended.

DR. G. V. BLACK: I do not care to enter into the discussion of this paper at any great length. I must say that I commend it as being correct, and I desire simply to reinforce the paper by the recital of a few cases that have come under my personal observation of infection which threatened life. While the essayist was reading the paper I hurriedly noted from memory some cases in which life was threatened from infection. I am not engaged in the general practice of surgery, although I am somewhat close to it. If I were, I might recite many more cases perhaps. Some of these

cases are properly surgical cases. The first case that occurred to me was that of a boy who rubbed his heel with his boot. The parents noticed the next morning that the boy was in trouble and sent for a physician who lived some ten miles distant. The physician after examining the boy came to my office and related the case to me. It seemed so serious that no time was lost. Instruments were taken for amputation, but too late. The boy died some hours after of gangrene of the most virulent type.

DR. BROPHY: How long did the trouble exist?

DR. BLACK: He died the same night. This is, of course, a remarkable instance occurring in the country as it did.

Another case was that of a child that had a slight burn on the wrist and was crawling about on the floor. The sore had been partially wrapped but became uncovered and the child got erysipelas. The child was sick six weeks, the erysipelas passed over the whole body, except a portion of the head, even down to the ends of the toes.

Another case of infection. A child had fallen, striking the chin against the doorstep, crushing the teeth together with great force. Alveolar abscess occurred which was not recognized by the physician. Extensive necrosis of the jaw followed in this case. I had to remove much bone, and the crypts of all permanent teeth from the lateral incisor back on the one side, and a number of them, not so many, on the other. The first bicuspid on the other side may be retained, but everything back of that was removed. Metastatic abscesses opened on the sides of the face and neck with not a prospect of recovery. This may be set down as a case of infection.

A young lady, from whom was removed a considerable osteoma of the lower jaw, went home three weeks after the operation. The wound had not quite healed. Two weeks later she returned with septicæmia, with a temperature of 102° . Metastatic abscesses occurred in the angles of the neck as in the last case. Two or three abscesses occurred in the floor of the mouth. The swelling of the throat and neck in this case was so serious as to threaten suffocation. I could collect many cases of infection by dental instruments.

Another case is that of a minister who went to a barber shop to get shaved, and had a beautiful face on him afterward. He was six weeks out of the pulpit before he found out what was the matter. There was considerable irritation of the skin, in other words, it was a very serious case of barber's itch.

These cases have occurred recently, and I simply relate them to enforce what has been brought out in the paper.

DR. T. L. GILMER: I was much pleased with the paper, and I think it is a good one to be placed into the hands of our assistants, so that they may know more of the dangers to which patients are liable. It would, perhaps, stimulate them to a greater care of our instruments. I do not depend wholly upon my assistant for the care of instruments, but it is a duty which should largely be put into their hands.

Dr. Newkirk did not speak of special medication. I presume he preferred to treat the subject in a general way, allowing the discussion to bring out other points.

I wish to show you a receptacle which I have used for a number of months for the purpose of keeping broaches in an aseptic condition. I am associated in an office with a physician, and some months ago he purchased some wooden bottles for dispensing tablets, and I conceived the idea that if I were to thoroughly saturate these wooden bottles with the oil of cassia, and after thoroughly cleansing my broaches, place the broaches in them, I might be able to keep them in a better condition than if they were kept in my operating case or in a glass vial. You will find broaches in each of these bottles, and if they are taken out you will discover they give off a strong odor of oil of cassia. Perhaps they are not thoroughly aseptic, but they much more nearly approach it than they would be if not subjected to this diffusive medicament.

DR. C. A. KITCHEN: In connection with the remarks of Dr. Black, I will speak of a case that occurred in Rockford in which Dr. Taggart lost his life by having a slight scratch in performing an operation. Dr. Fitch nearly lost his life by a similar occurrence.

DR. T. W. BROPHY: In the city of Chicago a few years ago a brilliant young physician lost his life in the same manner as Dr. Taggart, of Rockford. The gentleman was Dr. Hibbard, son of one of our most prominent citizens. All efforts to save him were unavailing.

There is one practical lesson that may be learned from this paper with reference to the use of broaches. The essayist did not speak of it in particular, and that is, a great many operators are of the opinion that if they make use of a broach which is thoroughly disinfected and is truly aseptic, it is sufficient. Let us take, for

instance, the upper molar tooth the pulp of which has died and the contents are of such a character as to infect the broach. We introduce a broach, that has been thoroughly sterilized, into one of those canals and then possibly carry it into another canal in which the pulp is not thoroughly devitalized. We meet with many such cases. The palatal root is devitalized, one of the buccal roots is devitalized, but the other buccal root is not. By this procedure we may infect the part so as to lead to trouble. I have seen cases of infection that have been a great source of trouble. It teaches us a lesson, namely, that the operator should use at least three broaches, one for each canal. in operating on teeth which have three roots, each broach sterilized, and by so doing we may proceed with the least danger of carrying infection from one canal to another. The same reason exists why each instrument should be sterilized when using them in the treatment of teeth having two or more canals as there should be in carrying them from one patient to another. That is a fact often lost sight of in the management of pulpless teeth, or in the use of broaches, in their treatment.

I am very glad that I heard the paper this afternoon because it is full of good things. It has gone into the matter in a general way. I do not think the paper is incomplete, as has been stated, because the essayist was frank in the statement that he did not desire to enter into the details of antiseptic surgery pertaining to the teeth and associate parts, because that would be brought out in the discussion. It is a paper that may be taken to our homes and read and studied, and a great many things contained in it can be put into practical use from day to day.

DR. J. G. HARPER: The bottles mentioned may be too expensive to keep burs and other instruments in. Very little of the oil of cassia would disinfect or kill most any germ if shut up in a room with it.

DR. A. W. HARLAN: The paper is in the right direction and is well timed, and if I can say anything to emphasize it I will do so. The question of treating cases antiseptically and of treating everything that you handle antiseptically is growing in importance. Very soon I presume that every dentist in the United States—in fact in the civilized world—will try not only to use disinfected instruments, but will try to make every operation as nearly aseptic as possible. The question of the disinfection of instruments is really of

more importance to the practicing dentist than some of the minor questions, as the care of napkins, rubber dam, cuspidor, etc. Of course an unclean cuspidor is a nauseous thing to look at and smell of, but the patient does not take its contents, and does not handle it, so that he does not become infected in that way. It is in the use of unclean forceps, clamps, knives, burs and broaches that the greatest danger lies. The ordinary barbed broaches are so cheap that when I use one I throw it away, that is the cheapest way to disinfect that kind of broach. The smaller broaches are easily disinfected either by heat or hot water to begin with, and then soaking them in some solution. What solution? I prefer a solution that is not odorous, one that can be made with water in preference to an oil for that purpose. For all the usual purposes of sterilizing instruments a ten per cent solution of boro-glycerine in water will disinfect your forceps, broaches and cutting instruments, and will leave them without a bad smell. That is one solution that may be used. A saturated solution of the silico-fluoride of sodium, which is a cheap drug, can be used to disinfect instruments after they have been cleaned, and there is no odor or taste to it. I use both of them. I make these solutions instanter on the desk from time to time. Of course, there are a great many different agents that may be used for disinfecting instruments, but I prefer to limit them to those that are soluble in water.

I know of a good many cases of infection of patients from the use of unclean instruments, and especially the kind of infection that Dr. Brophy has spoken of where there is a portion of the pulp left in a tooth and other portions have been removed from the other roots. This will explain to you why we have an alveolar abscess following the introduction of a clean instrument. I have under my care at the present time one of the worst cases of blood poisoning I ever saw, but I am happy to state that the patient is out of danger. This was due to the slow formation of an abscess from one of the buccal roots of a molar tooth that had been filled for more than ten years. The palatal root had been filled and the other buccal root was filled, and one was not, and I presume the remains of the pulp were left in there and there was the gradual formation of an abscess and it did not open externally because it was of such a low grade, and finally the patient had all the symptoms of septicæmia. Her husband spoke to me and assured me that his wife had some trouble with her teeth, and I told him to have her come down to my office.

She came down and I realized the danger she was in, and with the prompt cutting in and opening of the abscess, which was very large, although there were no external evidences of it, and the dressing of the interior antiseptically and putting her into the hands of a medical man who treated her constitutionally, in four or five days she was in a very much better condition. But her wrists and all the joints of both hands and jaws, knees and ankles and toe joints and pretty nearly every portion of the locomotor apparatus were so affected that she could hardly move, in addition to the other symptoms of blood poisoning. Of course, strictly speaking, that only belongs to antiseptic dentistry in a degree, but if the remains of the pulp had been removed from that root and the root had been filled, she would not have had these symptoms and the consequences.

DR. E. D. SWAIN: I have little to say on this subject beyond relating some of my own experience to demonstrate that we are ourselves sometimes in danger as well as our patients; also as to how small a quantity of the matter is necessary to make severe trouble.

In preparing for treatment an upper molar similar to that spoken of by Dr. Brophy, and later by Dr. Harlan, with one of the Donaldson broaches, a very fine broach, after using it I laid it down upon my table with the point extending over the edge, and in reaching for another instrument, without paying particular attention as to where my hand was going, I barely pricked the joint in my little finger, not sufficient to make it bleed. In a very few hours this joint was badly swollen. The pain was extending up my arm. I spent a sleepless night, and in about thirty-six hours from the time the injury occurred I went to a surgeon who made extensive cuts in the arm and put me under rigorous treatment. This simply shows that we are liable to infection ourselves.

DR. IRA. B. CRISSMAN: I want to thank Dr. Newkirk for the excellent paper he has read and for the many suggestions it contains. I may be a crank on this subject, a very good subject to be in earnest upon; it is one of the greatest importance to us as dentists to remember. The question is, do we practice what we preach in regard to the disinfection of our instruments and the antiseptic preparations used? Some of us do, others do not. How are septic matters carried? By unclean instruments, careless operators, neglectful assistants. How many dentists in this room clean that little instrument attached to the dental engine, the bur

brush? One bur is used, laid aside, and then another is taken, but are they kept clean? No. The bur is filled with dried decay, how easy to store infectious matter. The first patient on whom the dentist operates may have syphilis, and if the instruments he uses are unclean, and not sterilized and disinfected, infection is liable to follow in operating on other patients. Some dentists neglect to clean their instruments because they are in a hurry, but that is no excuse for a man not properly taking care of his instruments. Necessity forces us oftentimes to be in a hurry. Being in a hurry is no excuse for a man not properly cleansing each instrument. We go from one patient to another, and because we have several patients to attend to in succession, we do not follow out the rule we should in the matter of cleanliness. Here is an example:

A lady came to my office who had previously called on another dentist in Chicago. He invited her into his operating room immediately after dismissing a patient. In looking on his dental tray she saw excavators, broaches, etc., with decayed matter on them. This disgusted her, and she walked out of the office and did not return. She said she would not submit herself to those influences which she knew were wrong; that she would not allow any dentist to use an excavator on her teeth that had been previously used upon another patient without being sterilized.

Another case. Before I started for this meeting, a gentleman came into my office and wanted a left superior first molar extracted. I took my forceps and extracted it. After the tooth had been extracted, the gentleman leaned forward to rinse his mouth out, and my boy noticed his neck and called my attention to the condition it was in. There were two syphilitic patches on his neck as big as a half dollar. Supposing I had not carefully cleaned and disinfected that instrument, I might have carried syphilis from that patient to the next one operated upon.

In regard to keeping ourselves clean. The idea of a man operating with his finger-nails dirty, not washing his hands before attending to each patient, using soiled towels. Is that cleanly? Ask yourselves that question?

Then again, some dentists will use one side of a napkin, turn it over; and then use the other side; in some instances the napkin being covered with blood and stains, soiled and filthy napkins on the head-rest.

A word in regard to the mouth mirror, that little instrument

that lies on the bracket, so often used, never out of use. It is very rarely given a bath, seldom wiped, and as a consequence the patients have to suffer.

Another point I desire to speak of, and that is the tooth brush that is used in the dental engine to clean teeth. How many men will use this little tooth brush covered with salivary calculus, blood and rust, pass it from one patient to another, because they are too infernally stingy (if I may be permitted to use such an expression) to use a new one? Any man who will use the rubber dam a second time, punctured with holes, washed or not washed—well, I don't know what ought to be done to him; decide that for yourselves. Another case of a small, mean, stingy man.

I thank Dr. Taggart to this day for the instruction I received while under his care as a student. He swore at me many times for neglecting these matters of so great importance, for which I give him credit. (Laughter.) If any man would come into my office and say, "Dr. Crissman, you are not cleanly enough about your work," or this or that duty was not as it should be performed, I would thank him for it.

DR. GARRETT NEWKIRK, in closing the discussion, said: I hardly think I could add much to what has been said. Dr. Reid, as I understood him, asserted that boiling water would not disinfect instruments. I think that the experiments of Dr. Miller, recently published show that the introduction of instruments into boiling water for five or six minutes will almost invariably disinfect them. I wish to call attention again to that kettle which I mentioned. I had the tinner make two tubes reaching down into the bottom, one of which I use for dry heat and the other for sweet oil impregnated with a little of the oil of cassia or other disinfectant. My assistant puts the instruments into the boiling water, then in the dry chamber, then in the oil, after which they are wiped and laid away.

I was very glad to hear the report of cases by Dr. Black and others which emphasized the importance of this subject. also that by Dr. Swain showing how a very minute puncture with a fine broach, which did not even draw blood, had produced such a serious effect upon himself. I was glad to hear him call the attention of the practitioner to the danger to which he is exposed.

Dr. Harlan criticised me a little because I paid so much attention to matters of minor importance, such as clean cuspidors, napkins, etc. I assume that the cultivation of cleanly habits is a very

important thing in relation to this subject. If he is careless with reference to these matters, he will quite surely be careless with reference to disinfection. One is *cleanliness*, and the other is simply *surgical cleanliness*, and we cannot cultivate too much the habit of cleanliness in every respect. The little bottles shown by Dr. Gilmer will answer a most excellent purpose for keeping our burs and broaches. I cannot imagine how broaches could be otherwise than aseptic if cleaned beforehand and kept in such a box.

I was glad that the attention of the society was called to this fact, that although a broach be perfectly aseptic, if it be passed through a root of a tooth it immediately becomes septic and will infect the tissues beyond if it is permitted to touch them, or it may do so without touching them, providing matter is forced beyond the apex of the root, and it may be well to emphasize the fact right here which has been so often brought forth that we cannot be too careful about introducing any instrument into the root of a tooth until we have first thoroughly treated it for a number of days so that its contents are disinfected.

Discussion of the Report on Dental Science and Literature (*see page 552*).

DR. J. G. DICKSON: I desire to discuss this paper briefly, relative to the time required to graduate in dentistry. I would like to know if there is a college President or professor here who would like to take a student indiscriminately and agree to graduate him in any specified time. Can you make a dentist out of anything? That is the question. If you can't do it, there is no use talking about specifying the time. If you can make a dentist out of any man in a given time there must be a mechanical process about it. When you are dealing with mind there is such an infinite variety of it, that it is impossible to prescribe a limit of time in a dental school. There are persons who will grasp the situation in a moment; there are others who will require a great deal of telling and they will ask many questions which have no direct bearing on the question in point at all. That grows out of a lack of proper habit of thought and this touches the condition of mind of which I speak, and it also has to do with the time in which a man may attend a dental school and pursue a course of study; therefore I say it is absurd to attempt to prescribe time for study and for graduation. In all reasonableness it seems to me a ques-

tion of competency solely. I know of competent men who never saw the inside of a dental school, and I know of men who have attended college four and five terms and have not graduated. Again, I know men who have graduated but are certainly incompetent to say the least, so that it seems to me an unreasonable thing to limit the time, and it would be more equitable to require competency and not time as qualification in this matter.

DR. C. N. JOHNSON: I wish to say a few words in regard to the report of the committee. In answer to Dr. Dickson it may be stated that no reputable college will guarantee to graduate a student in a specified time. It is not a matter of time but of qualification. Most of the colleges prescribe that no man shall be graduated in less than three years. This is as it should be. It is not possible for the brightest men to be competent to practice their profession in less than three years, and it will be longer after a while when the profession is more educated. I do not think Dr. Dickson quite understands the situation. There are men who come before our colleges for graduation at the end of three years, and who fail. If they are not competent they will fail every time they come up for final examination, if the colleges do their duty.

I heartily commend the recommendation in the report with regard to dental journals. There is a place in the profession for both a weekly and quarterly dental journal, and if the matter were properly brought before the profession I think it would be endorsed. I am glad the matter has been mentioned.

I will now say a word or two in regard to the articles referred to in Dr. Noyes' report, the articles that have been appearing in the *Dental Cosmos* on "Methods of filling teeth." Dr. McKellops referred to them incidentally this afternoon. I want to say, in passing, that I regret that the gentleman who wrote those articles is not my personal friend. I am sorry he is a stranger to me. If he were a friend of mine I should feel like expressing very freely my opinion of much of the teaching in those articles. Dr. McKellops has criticised one point. I think the number of points that might be criticised are limited only in a slight degree by the length of the articles. But for me to attack the theories advanced by the author under existing circumstances might seem like taking an undue advantage by firing at a false prophet at long range. If the gentleman were here I should like to take issue with him on many points.

DR. GARRETT NEWKIRK: Considering the disadvantages under which the committee have labored, they have presented us with an excellent report, and one that scarcely needs an apology. Dr. Noyes has passed through serious trials during the year, and under the circumstances his work has been done remarkably well. It is worthy of commendation and publication, and comes as nearly filling the requirements of the committee as any we have ever had.

Discussion of the Report on Dental Art and Invention (*see page 547*).

DR. G. D. SITHERWOOD: I rise, not to criticise the report, but to say that I was very much interested in it, and that I shall try some of the things that have been suggested when I go home, to see whether they are good or bad. We are benefited and instructed by having our attention called to new things that have come up during the year.

Just one other point I wish to speak of, and that is with reference to aluminum amalgam and aluminum foil. I have had no experience with either, but I have had a long experience with aluminum in plate work, and when properly manipulated it is a success. There is no doubt in my mind about that. I intend to try aluminum amalgam when I get home and see what success I can make of it. An amalgam that will not shrink, stay bright in the mouth, a plastic filling of that kind is worthy of attention.

DR. GEO. H. CUSHING: I desire to say a word in behalf of the report. It is a good one. It is not expected that the committee will know everything that has transpired during the year. We all realize the great difficulty of getting information from the profession or the manufacturer of what they have as new.

DR. H. J. MCKELLOPS: I approve very much of the report. It is one that we all ought to feel proud of, and one from which any man can learn after listening to it. There are a great many things that are new, and they are advantageous to every one if they only look at them carefully.

DR. T. W. BROPHY: I desire to call the attention of the society to a new absorbent. It is called *Lintine*, manufactured by Johnson & Johnson, of New York. I have a little piece of it here for you to see. It is especially desirable as an absorbent for the removal of moisture from cavities and as a material with which to keep dry the gums or any part of the mucous surfaces within the mouth

while applying medicines. It is desirable also in excluding moisture for the treatment of pyorrhœa alveolaris and such conditions of the gums as require the exclusion of the saliva during the application of a medicinal agent. It is exceedingly cheap and far more efficient in its use than raw cotton or any other form of absorbent material. It comes in bales like cotton cloth, rolled up. Three or four yards will last for a long time.

Dr. J. G. REID: It seems to me that as the committee has mentioned aluminam foil and aluminum amalgam, that here is the place to demonstrate the results of what those materials will do. This is one of the things that ought to have been provided for under the circumstances. There might have been a clinic arranged for the purpose of demonstrating it, and it could then be watched closely from time to time. I have used aluminum amalgam, having put in about a half dozen fillings with it, and shall watch them from time to time. It looks very nicely and works well. I put them in about three months ago. I have had no experience with aluminum foil, and regret that we have to send direct to Meadville for it, it not being procurable in the dental depots. I hoped that we could get some of it here in order to have a clinic.

Dr. W. A. STEVENS: I would like to hear from some members to whom the committee refer as to how long they have used aluminum amalgam and aluminum foil, what test they have given them to deserve their high commendation.

Dr. E. D. SWAIN: I will say that I encountered no greater difficulties in using the aluminum alloy than any other amalgams. I am, unfortunately, one of those operators in the dental profession that cannot get along without amalgam. We have some men in this society who claim that it is unnecessary in almost all cases, and that teeth that cannot be saved with gold should be let go. I do not agree with them. My experience has been in very large cavities, in one or two instances where the tooth crown was cut away to perhaps one-half its length, of putting on a matrix and making a crown of aluminum amalgam. I saw the first fillings I put in some eight months ago, and to me they are more satisfactory in every way than any amalgam fillings I have ever made. With the eight months test there is no perceptible shrinkage either to the naked eye or under a magnifying glass. They are strong, and the color is even preferable to gold in my opinion, because it is less observable. I have had no experience with aluminum foil.

I have seen some fillings of it that were inserted by Dr. Cushing which promise well.

A MEMBER: Did the amalgam discolor the tooth?

DR. E. D. SWAIN: Not in the least. Dr. Carroll put up the aluminum amalgam, and it is understood that pure aluminum will not mix readily with mercury; therefore I say the aluminum alloy. My impression is that it is zinc alloy. When that occurred to me I was fearful we might have the experience which we have met with in other amalgams containing zinc, a wasting of the filling. But, on the contrary, the aluminum amalgam seems to grow harder in time.

If I may be allowed to digress a little, I wish to second the sentiment expressed by Dr. Reid in regard to clinics. I may be a little cranky on the subject of clinics, but I think the time has come when we can in a large measure do away with clinics as we have conducted them. It is not necessary for men to spend two half days in seeing another man do a simple operation in inserting and packing a simple gold filling. I think it is a waste of time. Our clinics should be conducted with the idea alone of presenting new operations, new appliances, etc., and not going over and over again year after year with the same old clinic of cutting a hole in the crown of a tooth and filling it up. We can all do that at home. It is the new things we want to see.

DR. GEO. H. CUSHING: In speaking of aluminum amalgam Dr. Swain has said all that I can say. My experience has been similar to his. We commenced its use at the same time. I think it is a little over eight months since we began to use it, and it certainly seems to give promise of being an excellent material, perhaps in some respects taking higher rank than any other that has been offered to the profession. It takes time to demonstrate the value of such things. So far as my experience goes it is precisely like that of Dr. Swain, it promises well, it keeps its color to a degree exceeding that of any other alloy I have ever used in the mouth, and it finishes up very beautifully.

With regard to aluminum foil, I can only speak from a limited experience with it. I have under my care four boys in Chicago, brothers, ranging from eight to fourteen years of age, whose teeth are of that character that we dread to see come into the office. They melt away before your eyes, and you are at a loss to know what to do with them. The cavities were very extensive in some

cases; in others they were commencing. These boys come to my office regularly every two months, and there is always something to be done, no matter how thoroughly I treat them at each sitting. I filled some of the teeth of one of the boys with gold, some with the ordinary amalgam preparations that we have, and then it occurred to me to make use of the aluminum foil experimentally. I think I filled four cavities in the mouth of this boy with aluminum foil. Two of them were very large cavities and very difficult to fill. The boy was one of those patients of whom you can have almost no control. I could not adjust the rubber dam, and could not keep his mouth in a very satisfactory condition; but I filled a compound cavity in a lower second molar, a very large crown and large buccal cavity extending below the margin of the gum. I filled it with this material very unsatisfactorily to myself as would naturally be the case under those circumstances. I saw the filling two or three weeks ago, and it was protecting the tooth admirably so far as could be judged, and was wearing nicely, very much better than I anticipated when I made it. I think it is almost impossible for it to stand any great length of time, owing to the fact that I could not keep it dry and manipulate it to the best advantage. All the other fillings of this material look well and are apparently protecting his teeth better than anything else in his mouth, either the gold or ordinary amalgam that I had used. I have since placed in his mouth, and in some of the other boys mouths, some of the aluminum amalgam which I cannot say very much about because it has not been in long enough for me to tell how it is going to work.

DR. W. A. STEVENS: Do you use it with coarse instruments?

DR. GEO. H. CUSHING: It is used the same as noncohesive gold in cylinders or pellets would be used. It works very much like tin. It is considerably harder than tin when it is finally condensed. If annealed, it works kindly if manipulated in the old-fashioned way that noncohesive gold was manipulated.

DR. T. W. BROPHY: I would like to ask Dr. Cushing a question. Is the aluminum foil prepared in the form of cylinders, and do you think it would be the best form in which to use it?

DR. CUSHING: That seems to me to be a matter of personal preference. Some men can handle cylinders better than any other form of gold either cohesive or noncohesive; others prefer to roll it up in pellets, and still others use it in the form of strips. Per-

sonally I prepare it in square pellets, as I use noncohesive gold. I do not think it makes any material difference which way it is used, yet I think if it were rolled into cylinders, as Dr. Brophy says, we could get in that way a preparation which would be more uniform. The cylinders could be rolled in gradations of hardness from the softer to the more dense. In that way we would be able to manipulate it to better advantage than by ourselves rolling it in pellets. Those who are experienced in the handling of noncohesive gold and making their own pellets, make them satisfactorily for their own use, but for general use and the commencement of its use, I think the suggestion of having it in the form of cylinders a good one.

DR. W. B. AMES: Dr. Cushing very kindly showed me the work he had done in a young man's mouth and certainly the fillings in this case were very commendable. I secured some of the aluminum foil a short time ago and I was not impressed with the material itself, from the fact that I was afraid that it would be hard to work, knowing it should be worked as soft foil I never attempted to use it. The fillings spoken of by Dr. Cushing had a splendid appearance. I would like to ask if it does not work harshly?

DR. CUSHING: No. It works somewhat more stiffly than tin, yet you could not say it was really a harsh working material. It requires a little more care in manipulating it, but after you have filled one or two teeth in the mouth you see how it is manipulated, and you adjust your manipulations accordingly. I do not think it can be in any sense considered a harsh working material. If annealed, it works more kindly.

DR. J. J. R. PATRICK: I understood one of the gentlemen to say that it was pure aluminum. If so, I wish to make a statement the reverse of that and say that if it was pure aluminum it could not be worked.

DR. CUSHING: Whether it is or not is immaterial if it preserves the teeth.

DR. T. W. BROPHY: It seems to me it would be of interest to the members present to know why aluminum cannot be worked.

DR. PATRICK: Simply because it has no adhesive qualities and it is too stiff to be worked alone. You can try it at any time. Furthermore, if it was pure aluminum it would not stay in the mouth any length of time. Any small amount of alkali present in the mouth at any time would destroy the aluminum. It would dis-

solve it. Aluminum is not attacked by acids of any kind; it will resist all acids, but it will not and cannot resist the alkalies. It is soluble.

Now as to aluminum plates. When they were first given to the profession it was said that they were made up of pure aluminum. I asked the gentleman who had the aluminum plates particularly whether it was pure aluminum or not, and he said it was. I said will you give me some of it? He said yes he would give me some of it, and I took it home, put it in acid, and it dissolved the tin out of it. I put the balance of the residuum in alkali and that was dissolved—separated easy enough. It is not a difficult matter to test it, and I hold it to be the duty of every man in the profession to know what he is using. I do not propose for any man to come and tell me that a certain thing is so-and-so, when I know it is not. If it works well, all right, I have no objection to that, but I say let him state exactly what it is, not attempt to hoodwink me. You cannot mix but a small portion of aluminum with tin or any other metal and make an amalgam of it. There is an antipathy between mercury and aluminum. You could not use pure aluminum filings and put mercury with it and rub it a minute in your hands, because the reaction is so great that you would have to drop it. It would raise a blister. You find there is a disposition to separate right away. There is a small proportion of aluminum with the ordinary amalgam alloys, enough to say that it is about as much aluminum as we had years ago in the gold amalgams, just enough gold to satisfy the conscience of the manufacturer.

DR. SITHERWOOD: Have you ever used any pure aluminum for base plates?

DR. PATRICK: Yes, I used it I think when it first came out, before the war, about thirty years ago. I made a plate of perforated gold and soldered it. You cannot solder aluminum alloy to aluminum itself. I made plates and had the satisfaction of knowing that they were full of holes in a month.

DR. C. R. TAYLOR: I would like to ask Dr. Patrick why there is such an antipathy between mercury and aluminum that they will not readily unite, and yet he says if you rub some of both metals in your hand they become intensely hot. How can heat be generated under those circumstances?

DR. PATRICK: I cannot satisfactorily explain why mercury should have an antipathy to aluminum.

DR. TAYLOR: If there is such antipathy how can you get such a heat?

DR. PATRICK: If you take aluminum, file it up, and put mercury in contact with the aluminum, it turns black, and heat is generated in so doing.

DR. TAYLOR: There must be some chemical union or you could not have heat.

DR. PATRICK: The heat is generated by the reduction of the aluminum to its oxide. The amalgam takes the place of the alloy that produces the filling material. The filling material may not only be tin, but there may be something else in it. There may be copper with aluminum added, and if the alloy parts with some of its aluminum in the mixture with the mercury it separates, and there may be some of it retained. I know it has to be a very small portion, because you cannot add much aluminum to any alloy and mix it with mercury without a settlement. The alloy may retain a portion of the aluminum, but I know in the mixture with mercury it generates heat, and in proportion to the amount of aluminum the heat increases.

DR. G. D. SITHERWOOD: Mr. President, I wish to say a few more words. I am interested in this subject because I believe in the working of aluminum. I have successfully worked it for ten years, and when men speak of its dissolving in the mouth, they may as well say to me that a gold plate dissolves. If it is pure aluminum it will last as any other plate—even a gold plate. I am just as sure of that as I am of anything in dentistry. I have put in a great many plates that have been worn ten years, and they are as good to-day as when they were first put in the mouth. Aluminum is the softest and most ductile of metals. You can roll it into ribbons, and tie it in knots, if it is properly annealed. It is a most beautiful metal. I was glad to hear the subject brought up and to know in what proportion tin, zinc or any other metals are alloyed with it. I want to get at the facts. I am disgusted with copper amalgam and many other filling materials that I have used, and when I cannot use gold I want something that will remain bright, will not disintegrate, and that is artistic in appearance.

DR. A. E. MATTESON: The gentleman says he uses pure aluminum, it lasts well in the mouth and holds its color as well as gold, and then he says there may be tin in it. How does he know it is pure?

DR. SITHERWOOD: Because I have tested it. If there is tin, an acid will take it out. Only a strong alkali will attack aluminum.

DR. MATTESON: Sulphuric acid will not attack aluminum. If you want something that is artistic, what is better than gold?

DR. SITHERWOOD: I am not discussing gold, I am speaking of aluminum.

DR. MATTESON: What are you going to make your joints with? You cannot solder aluminum.

DR. SITHERWOOD: It is soldered by all the workers in aluminum.

DR. MATTESON: If it can be soldered then it is not pure aluminum.

DR. PATRICK: I wish to correct an impression that has been made. I have no antipathy to aluminum. It is the mercury that has an antipathy to it. I think it would be practicable for dental purposes, but I have never found an alloy that I could use. As to soldering I defy any man in this audience to solder pure aluminum. If you can find aluminum that can be soldered, I can prove that it is not pure. It is a beautiful metal and might be a splendid material for filling teeth, if it were not for the fact that an alkali is its solvent. If you have some of the aluminum foil here, without entering into further discussion we can test the matter in half an hour. I will take the aluminum foil and show you what I said to be a fact.

DR. H. A. COSTNER: I desire to state that in a scientific report read before some New York society, on the subject of aluminum, the author states positively that there was a good solder for aluminum. I do not remember it just now.

DR. MATTESON: I saw the same article I think that Dr. Costner speaks of. I experimented with the ingredients, and gold was one of them. There were two forms given in the article I saw, and with all the skill I was capable of I could not succeed in uniting them with pure aluminum, and as I have said before, with pure aluminum you cannot make a solder. I know of manufacturers who, if they could get a solder for aluminum to make a perfect joint, would be willing to put up thousands of dollars.

THE PRESIDENT: You can solder it with any of the solders by using chloride of silver as a flux.

DR. C. R. TAYLOR: How much pure aluminum do we get as dentists? Can we use it as such? If I remember correctly the

Carroll Company advertised their amalgam as pure, but that the amalgam they use for casting purposes is not pure. It has both copper and silver in it—slight traces of it—to make it workable and useful for dental purposes as such. It is not pure aluminum, and there is where the trouble arises in reference to this discussion. The question is in reference to pure aluminum not an alloy.

DR. COSTNER: This is a grand line of thought to pursue and I would like to see every one who is interested in this subject express himself. It is worthy of investigation and pursuit. We should try it and I believe it can be used. We should discuss *why it can and why it cannot* be used. It is perfectly proper for a man to say that it cannot be done, but because that man cannot do it is no excuse why any one else cannot. (Applause.)

DR. CUSHING: I desire to reply to one remark made by Dr. Taylor with regard to the claim of the Carroll Manufacturing Co. They do not claim that it is pure aluminum.

DR. TAYLOR: I thought they did it in the circular sent out by them. I may be mistaken about it.

DR. H. A. GUNTHER: I have used filings from aluminum fillings with the oxyphosphate of zinc, and it seems to produce a staple filling. I do not know whether any one else has used it.

DR. W. A. STEVENS: There are two things in the paper which occurred to me, and I want to speak of them. They were recommended very highly. The first is what you call a cotton gin. If any of you can conceive of its practical use you can do better than I can. The other is for heating gutta-percha, or anything of that kind, so that you will not get it too hot. I think that I have something that was made twenty years ago that excels it, a soapstone griddle, four by four inches, and seven-eighths of an inch thick, and it retains the heat. I regard it as useful to every dentist. A great many things have been introduced in the profession that we have tried, and most of us young men of thirty years' practice have used them and stored them away, and labeled them useless.

DR. J. W. CORMANY: I want to call Dr. Stevens to task for what he has said. If he has a soapstone griddle which has done such excellent service for the last twenty years, where has this griddle been all these years. I have met him for ten or fifteen years at these meetings and he has never said a word about a griddle until to-day.

THE DENTAL REVIEW.

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THE SOUTHERN DENTAL ASSOCIATION.

The annual meeting of the Southern will be held at Lookout Mountain, Tuesday, July 26. It is expected by the programme committee that a large number of dentists will get together and resolve to come in a body to Chicago next year to attend the World's Columbian Dental Congress. We think that the Southern and American Associations should adjourn to Chicago and hold business meetings about Tuesday, August 15th, or Wednesday 16, 1893, and adjourn over to 1894. In this way the efforts of the combined membership can be concentrated on the Congress, which will be opened August 17, 1893. Take this into consideration, gentlemen.

ADJOURNED.

All the local societies have adjourned to the period "when the leaves begin to turn." We trust that the vacations will be enjoyed by our overworked brethren in every clime, and that renewed vigor will be injected into our city societies in the fall. Great possibilities of fame await the workers this coming year who will be able by their wit, good sense, tact, scientific work, or in some other way help us entertain the vast throng of dentists who will flock to our city for the treat in store for them. Awake from your lethargy and do your best to show the world what you are made of as a host, essayist or dinner giver.

THE WORLD'S COLUMBIAN DENTAL CONGRESS.

There never has been a meeting in the history of the profession that promised so well as does the coming congress. The time never before seemed so ripe for an event of the magnitude and importance of this meeting. Never before did an equal body of men work more effectively or harmoniously than has the Executive Committee from the time of its appointment till now. It has started out along the proper lines and the unanimity and harmony prevailing throughout all of its deliberations augurs well for future success.

But the work of the past—laborious as it has been—is as nothing to that which must follow. Something is needed in the way of revision, for, carefully as the work has been done, there are yet names missing that should be present on some of the committees. All of these matters will undoubtedly be attended to in due time and we look for a truly representative showing throughout the whole organization of the Congress.

But the preliminary work should not all be left to the Executive Committee. The men comprising that body have already sacrificed a great deal in time and labor. They have worked incessantly to systematize the organization and to arouse the enthusiasm of the profession. It now remains for every man calling himself a respectable dentist to constitute himself a committee of one to help work up interest in the meeting. In laboring for the success of the Congress he will not only benefit the profession but he will make himself a broader and a better man. No work of this kind can fail to redound to the credit of the man who takes part in it, and no man need consider himself too humble to come forward and offer to do his share. There is work enough for every one of us. We cannot all prepare essays suitable for a meeting of this kind; we cannot all take part in discussions involving such deep scientific research as will probably enter into the deliberations of the Congress; but we can each of us do something toward making the meeting a success.

Every man should perform the labor for which his capabilities best prepare him, and he should do it willingly. More than that he should begin to do something at once. The months will soon slip by and the date of the meeting will be upon us almost before we realize it. Let it not find any of us unprepared. No opportunity should be missed to urge the importance of the

meeting. The gospel should be freely spread that this is to be the most successful dental meeting of the century. It will be to the dental world what the Fair will be to the world at large—the greatest thing of its kind ever known.

C. N. J.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

To the Editor of THE DENTAL REVIEW:

DEAR SIR:—Again the month of roses is with us, full of perfume, suggestive of much that is elevating—certainly a new start in life.

Nobility is not all English—you know—yet we have made the acquaintance in our day, of dentists that in our estimation had noble natures and noble purposes. The name and fame of such need no bolstering by laudation. What the majority says is far from a true value of a noble pilgrimage through the common vicissitudes of each one's career; circumstances are frequently occurring among us that recall the lamentable loss that has come to us during the last thirteen months. Many have said how much we have needed the heroic counsels of Dr. Atkinson during the late disturbances. "Could such discord have been consummated?"

The First District Society has passed the first two months of its new administration. The May and June meetings were scarcely more than formal gatherings that met and adjourned. The essayist failed to put in an appearance until an adjournment had been ordered. "Facts and some Fancies," the subject for the evening was laid over until October. It's no telling whether they will be facts or even fancies at that date. Progress deals so rapidly with everything, that we have to move quick in these hurrying times.

Dr. Walker, under the head of "Incidents of Office Practice," stated that he attended the day previous a meeting of the Second District Society at Newburgh, on the Hudson. There was an excellent meeting; he said there were sixty in attendance—he counted them, and had it sworn to by a notary public. He did not show us the papers. The doctor is troubled, like many mortals, with unbelief. *Suppressio veri suggestio falsi*. He also announced that the second and first district would hold a union meeting

during the winter, to end with a banquet. The query was made, who would pay these second fellows' grub bill. It was all satisfactory when told that they would pay their own bills.

The Robber of the Rhine, is one of the attractions of New York just now in the opening of the new rebuilt Fifth Avenue theater. The Robber is the star, and hails from London, and is a pronounced success, has a rich baritone voice, is fine looking and a gentleman of very refined and affable manners. He is English, you know, born of American parents, and strange as it may seem, he has practiced dentistry five years. Hayden Coffin is the son of the late Dr. Coffin, of London, and the Coffin brothers now in practice there are his brothers. They are much esteemed by many of our American dentists for their professional attainments and generous hospitality. Chips of the old block. We had a very pleasant chit chat with Mr. Hayden Coffin, a few evenings since, together with his bright wife, at the Fifth Avenue theater. We went behind the scenes to their private room. From Mr. Coffin I learned that his father was about the first, if not the first American dentist that went from America to England, and settled to practice. This was about thirty-eight years since. First locating in Manchester, and securing a large and lucrative clientèle, being naturally ambitious, as all skillful practitioners are prone to be, he moved to London and took a first-class house in a location to correspond, and readily secured patients among the best people, practicing in this house twenty-one years before his decease. Dr. Coffin was widely known as a practitioner of liberal and progressive views, and carried these into his hospitality, which many can happily testify. Many know the value of his invention, "the expansion plate." It is readily granted by those who are personally acquainted with the two sons that follow their father, that they are worthy successors. Our acquaintance with the father, which was made at Dr. Atkinson's, is recalled with pleasant memories. Young Hayden Coffin has practiced in the mechanical department of his father's practice, having a liking for mechanical pursuits. Having a rare and rich voice for music, he has been lured into opera singing, for which with his recognized talent, liberally accorded by the New York press, he will find a much larger compensation. But, all dentists cannot sing well enough to command generous fees. Sometime, some day, we may all sing; yet, as Dr. James White said in one of his editorials, to be an angel we need to try

to be a good boy first. We are all on a pilgrimage, and will be obliged to do a good deal of traveling before it is ended, if a man is much in earnest. It involves *travail* also; by it we get experience, and out of this hope. What is a man without it? Much of this life is poorly untraveled, and there is a great beyond untraveled. Good health has much to do with our travel here, and how we get on. The question is often raised, is our calling a healthy one? Dr. Eames, a Boston practitioner, has just sent us a list of printed questions, relative to this subject. We have not been able to see why dentistry should be more unhealthy than many callings. Getting married is far from being healthy unless the parties know, or are willing to live so that it may not prove a failure. The mainspring of married life is love and respect, and we say that it is much, the necessity that it be so with us. One that does not have these two characteristics to inspire him cannot get on with much satisfaction, nor is there going to be much success from a professional point of view. More lose their health by lack of interest than by an excess. There seems to be a very unintelligent idea in the minds of some that the inhaling of noxious breathing is a source of infection to one's health. We do not entertain such views as rational. I do not believe that our daily practice is of itself unhealthy, with a reasonable hygiene, reasonable hours, proper exercise, of a nature best suited to one's tastes. Some like to go on fast; horseback, boating, fishing, gaming, all legitimate and helpful. Some of depraved tastes, habits, or form such, that do not conform to the laws of abiding health. We have observed many that have no system of labor, or of recreation. Too many accept the necessity of recreation by compulsion.

Men who confine themselves to twelve and fourteen hours in the office are sure to come to a premature old age, as a general rule. We think our calling has this one important advantage, an opportunity for cultivating sociability, and we think as a class, we are preëminently social, both in the office and out of it, far more than the physician can be, particularly in connection with practice, and there is in this a second advantage over the physician. We have a large portion of the twenty-four hours of time that is ours for diversion. This is worthy of notice.

While I do not think we are at disadvantage, so far as an unhealthy occupation is concerned, yet there is profit in the consideration of a subject that has so many complicated sides to it.

Whatever may be deduced from the discussion, each individual must apply that to himself which is best suited for his use; what's one's food may be another's poison.

The European travel is setting with full steamer lists; so far we have learned of only one dentist booked. Dr. A. L. Northrop and wife sail July 6. We reckon he has earned the rest and gratification the trip will afford. The doctor will find some things as tall and good-looking as he, say the Cologne Cathedral. Dr. Atkinson said, in this beautiful structure he for the first time while away, forgot himself. Try it, doctor you may do the same; it is a good thing to do occasionally. *What* is man? Its too hot to try even to tell our thought. We are among the ninety and nine, and one thing is sure; chemically considered man is largely water, and some gas. The real man is behind the scenes, and when we get there, what we now call man, will look pretty small to us, with our illuminated vision. Now it is much in our "I," then it will be as we are seen.

We think it profitable to call the attention of readers seeking intelligent reading, above the ordinary, to an article by Prof. Peirce, of the Pennsylvania College of Dental Surgery. Subject, "Pyorrhœa Alveolaris due largely to Systemic Predispositions." We do not accept all of it as borne out by the facts as we have viewed them during the last sixteen years, but we regard this article as a very valuable contribution to our literature. The part that directs our attention to what the professor terms "Calciic Pericementitis." Some day we will handle this subject with a larger grasp of possibility, because of such intelligent thought. Already this article has given a decided *outing* for those who advocate that this disorder is of local origin, and that successful treatment is possible, in the hands of those of mechanical ability only, such a paper directs thought to a larger mental application to things committed to our hands. A dentist will be a doctor some day. Papers of this class don't leave room for politics, and men that are able to take an intelligent grasp of them have no taste for politics. Give us more of such articles, and we will sooner be a "liberal profession." Yes, verily. We have this day received the official announcement of the Buffalo University Dental Department. It talks well. This school, it is said, is to be conducted in accord with the *legal aspect* of the State Society. Why have we two schools conducted in accordance with the legal aspects of this so-

ciety? In what manner is this second school to differ from the first, is a query that is raised, and we think wisely. What will the degree be in the second school? The first one has caused denunciation enough, from leading men of the profession, not to make a second venture. The Odontologicals tried to keep cool at their meeting this month. They failed as did the first district. A baker's dozen gathered rather reluctantly at a late hour and went through the formal opening, and voted to publish the two papers by title without reading or discussion. It was said, rather queerly we thought, that there was no one present that could discuss the first paper, which was by Drs. Heitzmann and Roy, on the "Minute Anatomy of the Cementum." We thought such a remark was an assumption. Dr. Heitzmann was present, and we surmise he was not only a little surprised but a good deal disappointed that there should be such apathy and disinterestedness; not much encouragement to those that take the trouble to prepare such papers. To be sure it was somewhat warm. The second paper was by Dr. Hugenschmidt, of Paris, "Alveolor Abscess without death of the Pulp." This was disposed of ditto. The question was raised whether any one believed that such a thing could occur. According to whose observation, we would ask? To be sure they are not common, but they *do* occur?

Dr. Hugenschmidt has in one of his late papers advanced the theory that there was to be found pus in a living pulp from causes remote, and he has carried his theory into this subject. Certainly not an uninteresting subject, we think; quite worthy of intelligent men's attention. The doctor shows himself an active thinker and a diligent one also. Well, both papers got to press without the courtesy of a discussion. Referring in a late letter to Dr. Stebbins' use of nitrate of silver for caries, which was presented to the May meeting of the Odontological Society, we heard this remark at the June meeting. It was thought to be *nothing* new. We think the doctor is entitled to the credit of introducing a systematic method of its use at least. It is true that many do know of its effects. It is to diligent, investigating men that we do and will continue to owe much for bringing these floating ideas to our attention in a system of arranged practice, and then let each, as they feel disposed, test their value.

We heard it echoed that it is useless to hold dental meetings in May and June; we should say it was, if no more interest is to be

manifested than has appeared by both societies this year. (Perhaps the day has gone by for so many meetings.) Better have a few good ones in attendance, than many luke-warmly noticed. A motion was carried at the last First District Society meeting to send out all future notices of the monthly meeting under a two cent stamp, for many *never* notice an envelope with a *one cent* stamp on it. We were told that many tell the postman not to drop any circulars in their boxes, for they *never* read circulars. Are not these fellows high-steppers? We believe that such is the custom of the 400, and fellows that suck their cane heads. Let those that send out circulars hereafter, bear these things in mind, and save their cents, and the pennies will take care of themselves. *

Dr. Heitzmann gave fresh evidences to the May meeting of the Odontological Society confirmatory of his reticulum theory, and they were so plain that they who ran could read. With all this, ain't it queer that Dr. Geo. Allan don't see it? Well, Dr. Heitzmann, the world will go on and learn if some won't, see? "You can lead a horse to water, but you cant make him drink." That is so in America. If Harrison is elected it may be different. If Cleveland, yours truly.

Another disc holder, new, by Dr. Steinburg of New York City. In the discs is a metal eyelet, oval shape; corresponding to this is a metal cap which is formed upon a stem that moves within a wire coiled spring around the head of the bit; placing the disc on the ball of your thumb, and you press the bit against it until the cap is through the metal eyelet, and with a half turn of the bit the oval cap is placed across the orifice, and your disc is fastened. The Doctor will step to the front until some fertile mind eclipses him. All eyes are focalized on the joint meeting of the Pennsylvania and New Jersey Societies at Cresson Springs, Pa., July 22d. This place has a charm for all that have had the good fortune to visit it. High altitude, fine hotel, reduced rates, and no change in the bill of fare. "Joint meetings" have been the fad among the dentists for several years. They originated in the Chinese laundry, meaning in our terminology, Chin-ease. We again quote the saying of our late endeared friend, Atkinson, "men that holler so loud over violated ethics need watching." We should say so. If flying reports are half true. We will only hint in this letter. If we find it honest, we will break the egg in our next, and woe to the men in high office if it does prove true. It becomes no small matter when

such men try in a stealthy manner to libel their fellows and prevent the bread and butter coming to their mouths, and thus make it necessary to raise funds to keep them in daily comfort. It would seem that men of level heads would see the wisdom of a halt, for they may not realize that the high altitude which they have gained by blind maneuvering, places them on dizzy heights. We probed one nonprofessional move of men in high position to its core, and if we see symptoms of blood poisoning we can do it again, and we will. The pen sometimes becomes mightier than the sword. It is said that light comes from the East; if it does, it will reach the West ere long, and we predict that the West is ultimately going to give us a higher standard of ethics than New York, the much boasted Empire State, has been doing of late. From the cloudy look we turn to a brighter view, and show that true merit ultimately brings its reward. Geo. Weld, D. D. S., M. D., who has practiced in New York City for the last twenty-two years, has at last earned his reward for his studious investigations both in the interest of dentistry and also reflected honor upon his earned degree M. D. The Doctor's papers have secured more than ordinary attention both professionally and by the public press. As an outcome of these he has invented a formula called "The Syrup of Iron Chloride," and has not only eliminated all the hurtful properties which acted upon the teeth, so long associated with the old formulæ of iron tonics, but has added an advantage which has secured a decided recognition from the medical profession by a liberal endorsement. Physicians find that this new remedy is capable of being received into the stomach of the most fastidious without the disagreeable nauseous effects that so commonly arose from the old remedy. It is the testimony of many physicians of high repute in New York City that no iron tonic has ever shown such capabilities for increasing the hæmoglobin as this syrup chloride. So quick was this new remedy seen to be of decided value over the old, at once a marked value was recognized by such sagacious business pharmacutists as Parke, Davis & Co., of Detroit, and they have secured to Dr. Weld a choice financial interest and are putting \$50,000 into its first year introduction. Dr. Weld goes to Europe during this season to look after the further interest of his favored medicine. No one will be more glad than the Doctor's many appreciative friends, only those who stand idle, do the grunting and say, "I have done all I am going to do for

the profession. It isn't appreciated." To young practitioners we say, do something that is valuable and the intelligent public will want it. In some future writings we propose to say further of this remedy, for we have been putting it to use and it has done great things for some of our patients afflicted with "Pyorrhœa Alveolaris," and "Calciæ Pericementitis," and "Riggs' Disease." We have sworn always by our dear favorite remedy day and night, sulphate of cinchonidæ, so often emphasized by Dr. Atkinson, but this new remedy has made things so well and done—we must go one better for it. Try it. Send to Parke, Davis & Co. for sample. Let us say that there are some things that this medicine will not do. It will not restore lost reputation to a broken down politician, nor will it let off steam dentists from smoking down below, who tear human teeth ruthlessly out of the jaws and put in their place "Biled Rubber" and "Store teeth" at \$4.00 a set.

This, is a good move, we think. The odontological society passed a resolution asking the coöperation of chemists in producing a formulæ which will become of use to us in any manner, and they also advise the publication of the formulæ of all our compounds, believing that in this way we can be of valuable assistance to each other. Bring out the secret archives if we expect to become a "liberal profession." We have just received a "yellow covered" circular announcing a new local anæsthetic called a "Dental Surprise," "perfectly safe." It comes from Holly, Mich. Those put out in the way that is, are of a kind. It all belongs to the "Biled Rubber" man. It means indiscriminate extraction of teeth, to be replaced by artificial ones. Good men with intelligence, cannot italicize enough against such things.

We congratulate the readers of the DENTAL REVIEW on the rare quality of its contents, although it did not come to our hands until the 24th instant, yet we have carefully perused the papers and find much to commend and no one subject more than that of Dr. Black. We felt all through the reading of it, that we were on high ground, and that it would take no little mental activity to intelligently get it digested. It pleases us that we were so much in line of the thought of what the doctor is trying to impress the importance of on the minds of our profession viz. the integrity of the gum septa, or as we have used the term in our last letter, "gum borders." We can assure Dr. Black he is sowing good seed, and it will bear good fruit "after many days." How few of

the many are leading busy, studious and observing lives, as the authors of such papers exhibit, and how often they will be pricked in their sensitiveness by seeing their ideas made use of, and no credit, (and copyrighted.) Well, as the dear old Dr. Atkinson so often said, "Let the truth be preached, however it may be." Dr. Black proves himself a busy man. A member of our society once said, "he did not see how Drs. Atkinson and Mills found so much time to write papers for dental societies." There is time for everything that oneloves to do. We make the writing of these monthly letters a pastime. It is a part of our recreation, and in many ways we are assured that they are interesting to many that read them, and we hope helpful and useful. For we reason thus, if one's service does not serve some good purpose it is time and labor wasted. We have met Dr. Cochran here who has come by the Isthmus from San Francisco, coming this route essentially for regaining his strength, having got overworked. He has been connected with the dental department of the university of California. Dr. Roy, a wide-awake and progressive dentist is sojourning at New Orleans for recuperation. He has been connected with the New York Dental College. He is one of the kind that is not content if not pushing ahead in same studious pursuit. His studies, which will be published soon in the *International Dental Journal*, will tell the stuff he is made of. Under the instruction of Prof. Heitzmann he has been investigating the minute anatomy of the cementum. The more we can know of these matters the stronger we are scientifically. We doubt if there is an opening of more fertile opportunities for scientific study for an ambitious young practitioner than in the laboratory of Prof. Heitzmann. A knowledge of the tissues with which we are daily dealing, is the key that unlocks the door of a successful practice. Such a practice is to become the demand from an intelligent *clientele* in the near future. Young men should have an ambition to *magnify the importance of their calling*.

NEW YORK, July, 1892.

Ex.

REVIEWS AND ABSTRACTS.

DIE ORTHOPEDISCHE BEHANDLUNG DER SATTELNASE, mittelst von der Zahnheilkunde gebotenen Hülfsmitteln. Von Matti Ayräpää, M. D., University of Helsingfors, Finnland. Kuopio, Finnland, 1892.

This interesting treatise on the orthopedic treatment of cases where the destruction of the bridge of the nose creates an unsightly

deformity, is illustrated with 82 cuts showing the results attained in the treatment of twenty practical cases. Instances in which the loss of the nose or the nasal septum, including a part of the roof of the mouth, has resulted from syphilis, lupus, scrofula, abscesses, external injuries, congenital deformity, etc., are fully described.

The author has corrected many of these deformities by means of supports attached to the roof of the plate, extending through perforations in the roof of the mouth to the sunken nose, and by thus raising the tissues converting an insignificant nose and an almost repulsive face into an intelligent appearing countenance. A concise history of this branch of rhinology—which the author considers a part of dentistry—is also a part of the work.

THE DENTAL LAW FOR WASHINGTON, D. C.

PUBLIC—NO. 74.—An act for the regulation of the practice of dentistry in the District of Columbia, and for the protection of the people from empiricism in relation thereto.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any person to practice dentistry in the District of Columbia, unless such person shall register with the health officer in compliance with the requirements hereinafter provided.

SEC. 2. That a board to carry out the purposes of this act is hereby created, to be known as the Board of Dental Examiners, to consist of five reputable dentists resident of and for three years last before appointment actively engaged in the practice of dentistry in the District of Columbia, to be appointed by the commissioners of said District for terms of five years and until their successors are appointed: *Provided*, That the first five appointments shall be made for terms of one, two, three, four and five years, respectively. A majority of said board shall constitute a quorum. Vacancies occurring in said board shall be filled by appointment of eligible persons for unexpired terms.

SEC. 3. That it shall be the duty of the Board of Dental Examiners, first, to organize by electing one of their number President and one Secretary, to provide necessary books and blank forms, and publicly announce the requirements of this act and the time, place, and means of complying with its provisions within thirty days from its passage; second, to promptly certify to the health officer for registration all who are engaged in the practice of dentistry in said District at the time of passage of this

act who apply therefor; third, to test the fitness and pass upon the qualification of persons desiring to commence the practice of dentistry in said District after the passage of this act and certify to the health officer for registration such as prove, under examination in theory and practice of dentistry, qualified in the judgment of the board to practice dentistry in said District; fourth, to report immediately information of any violation of this act, and, annually, the transactions of the board to the commissioners of the District of Columbia: *Provided*, That all graduates of dental colleges which require a three years' course of study shall be entitled to certificates upon payment of the certification fee and without examination as to their qualifications.

SEC. 4. That it shall be the duty of every person practicing dentistry in said District at the time of the passage of this act to make application to said board, in form prescribed by said board, for certification, and present the certificates thus obtained for registration to the health officer within sixty days from the passage of this act. Every such person so registering may continue to practice without incurring the penalties of this act.

SEC. 5. That persons desiring to commence the practice of dentistry in said District after the passage of this act shall first obtain a certificate of qualification from the Board of Dental Examiners, granted under authority conferred upon said board by section three of this act, and present the same to the health officer for registration.

SEC. 6. That it shall be the duty of the health officer to register all persons presenting certificates from said board in a book kept for this purpose, and indorse upon each certificate the fact and date of such registration.

SEC. 7. That certificates issued and indorsed under the provisions of this act shall be evidence of the right of the person to whom granted to practice under this act.

SEC. 8. That any one who shall practice or attempt to practice dentistry in said District without having complied with the provisions of this act shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than fifty nor more than two hundred dollars, and in default of payment of such fine shall be imprisoned not less than thirty nor more than ninety days, said fines, when collected, to be paid into the Treasury of the United States, to the credit of the District of Columbia: *Provided*,

That nothing in this act shall be construed to interfere with physicians in the discharge of their professional duties, nor with students pursuing a regular uninterrupted dental college course or in bona fide pupilage with a registered dentist.

SEC. 9. That to provide a fund to carry out and enforce the provisions of this act the Board of Dental Examiners may charge such fees, not exceeding one dollar for each certificate and ten dollars for each examination, as will from time to time, in the opinion of said board, approved by said commissioners, be necessary. From such fund all expenses shall be paid by the board: *Provided*, That such expense shall in no case exceed the balance of receipts.

Approved, June 6, 1892.

A TREATISE ON DENTAL JURISPRUDENCE FOR DENTISTS AND LAWYERS, embracing the following subjects: Dental Jurisprudence; Dental Expert Testimony; Cocaine Poisoning; Fracture of Maxilla during Extraction of Teeth; Injuries and Deaths due to Anæsthesia; The Jurisprudence of Dental Patents, etc., etc. By William F. Rehfuß, D. D. S., author of "Dental Massage," member of Odontological Society of Pennsylvania, of the New Jersey Dental Society; Dental Protection Association of U. S., etc. Published by The Wilmington Dental Manufacturing Co., No. 1413 Filbert Street, Philadelphia. 1892. Cloth, \$2.50. Sheep, \$3.50.

Marvelous as has been the growth of the profession of dentistry in the past decade, and accustomed as the reading practitioner has been to the appearance of new publications of a high order of scholastic and practical worth, the present volume from the pen Dr. Rehfuß marks a noticeable step in dental progress. It will be a surprise to many steady-going ones to realize that the profession has arrived at such a dignified position in human life and affairs to furnish material and bring forth such a good book on forensic dentistry. If it serves no other purpose it will have justified its production in the increased self-respect engendered by a reading. The author had the rare fortune of an opportunity. A work on Dental Jurisprudence is unique. Whether time is ripe for its appearance is a question the publisher will soon be able to determine. There is no doubt that every practitioner of any considerable experience will recall occasions when some of the

information or advice contained in this work would have been of great service if not of decided financial assistance.

There are 468 pages. It is a very lucid presentation of the problems which any dentist is likely to be confronted with. The author has taken great pains to go over the whole history of legislation appertaining to dentists, both in their individual and collective capacity. The compilation and aggregation of cases furnished cannot fail to make a most convenient and useful authority for both legal adviser and client in all dental cases. The first 204 pages are devoted to this task. The cases cited are quoted from court records and published accounts in the literature of the profession, and are gathered with consummate care and good judgment for all possible and probable needs. While it is not a book intended to be read, being rather a book of reference, it nevertheless is very readable, and the man who "keeps up" will not be content till every paragraph is his, while he who wants accurate knowledge of past events of a legal nature will find it indispensable. To give an idea of the field covered, allow me to quote from table of contents:

Dental Expert Witnesses.

Qualifications Required of Experts.

The Distinction between an Expert and a Common Witness.

Identification by Means of the Teeth.

The Legal Right of Dentists to Administer Remedies Systemically.

Malpractice. What Constitutes Malpractice.

The Dentist as Defendant in Criminal and Civil Prosecutions.

The Degree of Skill Required.

"Ordinary Skill."

Damages.

Infection or Disease from Unclean Instruments.

Rape Under Anæsthesia.

The Legal Rules Governing the Fees Recoverable.

The Book Accounts of Dentists.

Authority and Legality of State Boards.

Patent Rights.

It will be seen that even this partial list of subjects deals with questions of vital interest. Every one should be cognizant of both his own and his patients rights. This book furnishes in ready form information which goes farther to settle such problems both by the

decisions of eminent jurists in high courts and the opinions the author himself offers than can be elsewhere found. The book is faultlessly done by the printer and every way worthy a place in the dentist's and lawyer's library.

PAMPHLETS RECEIVED.

OUR STATE DENTAL LAWS. A historical and comparative analysis, by C. B. Rohland, D. D. S. Reprint from *Dental Cosmos*.

BIOLOGICAL TEACHING IN THE COLLEGES OF THE UNITED STATES, by John P. Campbell, Ph. D. Government Printing Office, Washington, D. C.

The Fourth International Prison Congress, St. Petersburg, Russia, by C. D. Randall, official delegate from the United States, Washington; Government Printing Office, 1891.

History of Higher Education in Michigan, by Andrew C. McLaughlin, assistant professor of history in the University of Michigan. *Ibid*.

The History of Higher Education, Ohio, by Geo. W. Knight, Ph. D., Professor of History, Ohio State University, and John R. Commons, A. M., Associate Professor of Political Economy, Oberlin College. *Ibid*.

History of Higher Education in Massachusetts, by George Gary Bush, Ph. D. *Ibid*.

Analytical Index to Barnard's American Journal of Education. *Ibid*, 1892.

The Scientist International Directory, compiled by Samuel E. Cassino, 1892, Boston. The Casino Art Co., Exchange building. Price \$2.00.

DENTAL COLLEGE COMMENCEMENTS.

CINCINNATI COLLEGE OF MEDICINE AND SURGERY—DENTAL DEPARTMENT.

The annual commencement exercises of the Dental Department of the Cincinnati College of Medicine and Surgery, were held at the Young Men's Christian Association Hall, Cincinnati, Ohio, March 16, 1892.

The number of matriculates for the session was thirty-four.

The degree of Doctor of Dental Surgery was conferred by the President of the Board of Trustees, Prof. Geo. W. Harper, A. M., on the following (10) candidates:

Ernest Bragdon, M. D.	Clifford E. Silett.
James F. Clayton.	William E. Sloan.
B. Frank Corwin.	John C. Wallace, M. D.
G. W. Hoffman.	S. H. Wardle.
James F. McCamant.	Fred G. Williams.

NATIONAL UNIVERSITY—DENTAL DEPARTMENT.

At the annual commencement exercises of the Dental Department of the National University held at the Academy of Music, Washington, D. C., May 17, 1892, the degree of Doctor of Dental Surgery was conferred by Hon. Arthur MacArthur, Chancellor of the University, on the following (4) candidates:

William E. Bradley, California.	Edwin K. Gerow, New York.
Sheldon G. Davis, Ohio.	David E. Wiber, District of Columbia.

UNIVERSITY OF MICHIGAN—COLLEGE OF DENTAL SURGERY.

The degree of Doctor of Dental Surgery was conferred on the following (39) persons:

Burt Abell,	Thomas Ebenezer Howson.
Samuel Howard Arthur.	Osgood Frank Ingalls.
Harry Howard Avery.	Vida Anette Latham.
Harry Park Ball.	Ben Hubbard Lee.
Walter Joel Bell.	Frank P. Martin.
Charles Lee Blunt.	James Andrew Milliken, D. D. S., University of Pennsylvania.
Herbert Warren Bovee	Henry Milling.
Charles Edward Burchfield.	John Albert Moore.
Charles Sylvester Chadwick.	William James Mummery.
Timothy Spencer Childs.	William Edward Prather, D. D. S., University of Maryland.
Thomas Coleman, D. D. S., Royal College of Dental Surgeons.	Frank S. Prettyman.
Eli Mahlon Conard.	Ellen Dennison Searle.
Oscar Willmott Daly, D. D. S., Royal College of Dental Surgeons.	Edward Douglass Slawson.
Archibald Warren Diack.	Joseph Allen Snyder.
George Dilworth.	Edward Bartlett Spalding.
Elmer C. Goldthorp.	Carrie Marsden Stewart.
Allison William Haidle.	George Ernest Tribby.
Charles William Hall.	Anthony Van Kammen.
Henry James Harvey.	Austin Smith Watrous.

May Weston.

MEMORANDA.

Have you used Euophen ?

Are you going to Niagara Falls ?

Dr. B. H. Teague, of Aiken, S. C., visited Chicago recently.

Dr. C. L. Goddard, of San Francisco, visited the Hawaiian Islands last month.

Dr. W. J. Younger, of San Francisco, was a recent visitor to Chicago.

Drs. R. N. Laurance and C. A. Kitchen spent a few days in Chicago in June.

We learn that the Dental Department of the University of Denver, has been abandoned.

Dr. A. E. Baldwin is the new Chairman of the Section on Dental and Oral Surgery of the A. M. A.

The twenty-second annual meeting of the Wisconsin State Dental Society, will be held at Milwaukee, July 19 to 22, inclusive.

Dr. A. P. Southwick is the Secretary of the dental department of the University of Buffalo. His address is No. 11, Niagara street, Buffalo, N. Y.

The Missouri State Dental Association held its twenty-eighth annual meeting at Artesian Park Hotel, Clinton, Mo., and was largely attended.

Mr. H. Baldwin, M. R. C. S., L. D. S., has an interesting article on "Non-cohesive gold and tin fillings," in the *Dental Record* for June.

Dr. Garrett Newkirk has been appointed on the State Board of Dental Examiners for Illinois in place of C. R. E. Koch, who declined reappointment.

The Missouri Dental College will be located in the new college building on Lucas Place, St. Louis, at the beginning of the fall term, September 27, 1893.

It is now the *Cosmos* and the *Journal* of the B. D. A. who are paying each other delicate and sarcastic compliments. Wonder when our turn will come?

The following gentlemen compose the Board of Examiners of the District of Columbia: John B. Rich, H. B. Noble, J. R. Walton, L. C. F. Hugo, and W. Donnally.

James Miller and Tullius Fay, of Paris, were fined for injecting cocaine into a patient's jaw, recently, without being licensed so to do. Both are Englishmen not possessing registrable qualifications in France.

Mr. Harry Rose, L. D. S., is the new dean of the National Dental Hospital of London, England. Very soon the hospital will be located in its new building, now in course of construction.

CAMPHOID.

Camphor, twenty parts; alcohol, twenty parts; pyroxylin, one part. A good protective.

AMERICAN DENTAL ASSOCIATION.

The above association will convene at Niagara Falls, New York, Tuesday, August, 2d, and continue in session four days. Be sure to attend.

Drs. H. B. Noble, Wm. Donnally, L. C. F. Hugo, J. H. Lewis, and S. L. Hills have been largely instrumental in getting a law passed to regulate the practice of dentistry in the District of Columbia, the full text of which we publish in this number.

Felix Weiss, L. D. S., is deceased. Mr. Weiss was respectively Librarian, Secretary, and President of the Odontological Society of Great Britain, and a very

voluminous author and earnest advocate of dental education and legislation in England. He will be universally mourned.

By decrees of the 19th of February and 22d of March, the two dental schools of Paris have been decided to be establishments of "public utility," and will be so recognized and published in the official gazette of the laws of France. Approved by Carnot, President.

In cocaine poisoning the patient should be placed in a horizontal position. Bathe the face in cold water, let the patient inhale nitrite of amyl, give coffee or caffeine or inject ether subcutaneously, massage, flagellations, and artificial respiration should be resorted to if necessary.

A large number of dentists throughout the country are becoming interested in the reading classes established by the Post Graduate Dental Association. This character of home reading will undoubtedly prove very beneficial to those who join the classes and pursue the study recommended.

The annual session of the Wisconsin State Board of Dental Examiners, will be held at the new Pabst Hotel, Milwaukee, July 19th, 20th and 21st.

EDGAR PALMER, *Secretary*,
LaCrosse, Wis.

Recently ye editor entered a building in Chicago, where nearly all the offices are filled by dentists and approaching the magnate who runs the elevator "asked if he were the new elevator man" "yes," said he, "but I think I'll quit, would you like the job"! And then the editor walked out.

At the regular monthly meeting of the Chicago Dental Society held Tuesday evening, July 12, Dr. E. A. Royce read a paper entitled "Filling with Crystal Gold on the Surface of Amalgam."

CROTON CHLORAL.

Croton chloral in five to ten grain doses, in pill form, administered three times a day will often relieve facial neuralgia when other remedies will fail. The dose should be diminished after two or three days to five grains or less as occasion demands.

The annual meeting of the Delta Sigma Delta Fraternity was held at Forest Glen Park, Lake Geneva, Wis., July 5 and 6. The revised constitution, by-laws and code of ethics was adopted. The following officers were elected for the ensuing year: D. C. Bacon, S. G. M.; R. B. Tuller, S. W. M.; Louis Ottofy, S. T.; and T. A. Broadbent, S. S.

INDIANA DENTAL ASSOCIATION.

At the thirty-fourth annual session of the Indiana State Dental Association the following officers were elected: President, Robert W. Van Valzah, Terre Haute; Vice-President, W. M. Hindman, Vincennes; Secretary, G. E. Hunt, Indianapolis; Treasurer, R. T. Oliver, Indianapolis. G. E. HUNT, Secretary.

HONORED.

The honorary degree of Master of Arts was conferred on R. R. Andrews, D. D. S., of Cambridge, Mass., by Dartmouth College, at the annual commencement

held June 30th, 1892. This is a well-merited recognition of much painstaking labor by Dr. Andrews in the field of science.

It may not be known to many that it requires considerable care not to violate some code, law or rule of associations of which we may be members. A resolution which was adopted in 1888 at Louisville by the American Dental Association is as follows:

"Resolved, That it is unprofessional to use on cards or signs anything except name, title and address,"

The next meeting of the Northern Ohio Dental Association will be held in Akron, Ohio, the first Tuesday in May, 1893. The newly elected officers are: W. H. Whitslar, Cleveland, President; S. B. Dewey, Cleveland, Vice President; H. Barnes, Cleveland, Corresponding Secretary; L. P. Bethel, Kent, Recording Secretary; Chas. Buffett, Cleveland, Treasurer.

H. BARNES;

Corresponding Secretary.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The Ninth Annual Meeting of the National Association of Dental Faculties will be held at Niagara Falls commencing on Monday, August 1, 1892, at 10 o'clock A. M. Each delegate must be a member of the faculty of the school he represents, and be provided with the proper credentials.

W. H. EAMES, *Pres.*

J. D. PATTERSON, *Sec'y.*

The London Polytechnic has already booked more than 800 for the World's Fair tour which it has undertaken to manage for English artisans, and the number is being increased daily. These excursionists will visit the Exposition and incidentally see the sights of New York, Philadelphia, Washington, Chicago and Niagara Falls, on a total expense, including transportation both ways, of about \$125. They will be comfortably lodged, while in Chicago, in D. L. Moody's bible institute, and in barracks on a block of ground belonging to Marshall Field, the use of which accommodations has been donated by the gentlemen named.

TAKE NOTICE.

The following amendment to be introduced directly after the period at the end of the word "year" in the twenty-seventh line in the Senate copy of H. R. bill No. 7696 of this session of Congress, which passed the House of Representatives June 4, 1892:

"Provided, that nothing in this act shall be construed as authority to collect statistics from professional men, such as lawyers, physicians and dentists, of the products made for their individual clients or patients."

A PROTEST.

A committee representing Maryland, Pennsylvania, New Jersey, New York, Connecticut, and District of Columbia, had a hearing last Monday, June 20th, before the Census Committee of the U. S. Senate (Hon. E. Hale, Chairman), protesting against the classing of dentists as manufacturers, and asking for an amendment (see enclosed). The Superintendent of the Census was present, and agreed in writing to carry out the amendment in spirit and letter. We regard it as a great victory for our profession.

Sincerely yours,

H. B. NOBLE.

The North Dakota State Dental Society meets at Grand Forks, August 17-18. It is anticipated that the meeting will prove to be one of great interest and benefit. Among those who have consented to be present will be Dr. T. E. Weeks, of Minneapolis, who will deliver a lecture; Dr. S. J. Hill, of Fargo, will read a paper on the "Early History of Society and Legislation in the State;" Dr. A. T. Bigelow, of Bismarck, will read a paper on "Pioneer Dentistry in North Dakota," Dr. Louis Ottofy, of Chicago, will read a paper on "Post Graduate Study."

Dr. Nason, the secretary of the new dental society at Omaha, Neb., was a recent visitor to Chicago.

Dr. N. D. Edmonds, the genial and popular young demonstrator in charge of the Infirmary of the Chicago College of Dental Surgery, hath turned Benedict, taking unto himself a charming bride. A host of students wish him an eternal honeymoon.

AMERICAN DENTAL ASSOCIATION.

The executive committee is completing arrangements regarding railroad and hotel reduction for the meeting to be held at Niagara Falls, August 2-5. The programme when completed will be sent to members and to the profession generally. Any one desiring to attend must provide himself at the starting point (and at each point where another railroad line carries them), with a certificate showing that one regular full fare has been paid. As the various accessory meetings, such as the National Association of Dental Faculties, the National Association of Board of Dental Examiners, various committees of the World's Columbian Dental Congress, the Dental Protective Association, and the Post-Graduate Dental Association, will begin July 29, the executive committee has arranged that tickets will be good from July 26 to August 8 inclusive.

The chairmen of the sections are requested to call meetings of their respective sections *before* the general meeting on August 2, and be prepared to present their reports promptly, when the sections are called.

DEATH FROM A SINGULAR MALADY. JAMES MULLEN DIES AT LOUISVILLE FROM A DISEASE OF THE BLOOD.

LOUISVILLE, June 26.—From a hole not larger than a pin point, James Mullen of 1012 Seventeenth Street, bled to death yesterday morning. He had been ill for several months, and his malady baffled the physicians who attended him. Dr. Wood, who was with him when he died, ascribed his death to the fact that his blood had lost all its coagulative power and had taken in its appearance the quality of milk. The corpuscles of the blood had become perfectly white. From a small scratch or cut the blood flowed with such rapidity that on several occasions it was scarcely able to be stopped before causing death. Yesterday morning one of the smallest of the blood vessels under the tongue became broken. The point where the blood came from was so small that no danger was apprehended at all. All efforts, however, to stop the flow were futile. Every remedy was resorted to, but to no avail, and in little less than an hour Mr. Mullen bled to death.

DENTISTS AND THE CENSUS BILL.—A bill was introduced in congress last week that, if passed, will have a direct bearing upon the completion of the bulletin of Baltimore manufacturing statistics.

As the census law at present exists, there is a doubt as to whether the penalties for refusing to answer questions asked by the enumerators, apply to all branches of statistics included within the scope of inquiry of the census office, or solely to the population statistics. It is feared that prosecutions can be made only in those cases where citizens have refused to answer the questions put to them by the population enumerators, and that the agricultural, manufacturing and other divisions have no authority to enforce answers to such questions as may be asked by their enumerators. The bill referred to provides penalties for refusal to answer any questions included in the schedules of the census office, and will be used in the nature of thumbscrews and spiked boots to enforce replies.

The dentists of Baltimore, who, by their refusal to answer certain questions asked by the manufacturing division enumerators, have caused the delay in the work of preparing the bulletin of Baltimore's statistics of manufactures, will be the first victims of the inquisitorial machine, if the bill is passed. The Baltimore bulletin of manufactures cannot now be brought out, before midsummer. Had these dentists answered the questions put them by the enumerators, the bulletin would have been issued last January.—*Baltimore American*, April, 1892.

WISCONSIN STATE DENTAL SOCIETY, MILWAUKEE, JULY 19 TO 22, INCLUSIVE.—SUBJECTS AND ESSAYISTS.

"Dental Medicines, their Specific Action and when Indicated." Dr. Edgar Palmer, La Crosse.

"A Glance at Familiar Characters." Dr. George H. McCausey, Janesville.

"The Use of the Public Press." Dr. J. W. Gale, Chippewa Falls.

"Reflex Action." Dr. O. Thompson, Neenah.

"Electricity as Applied to Dentistry. Illustrated with all the Electrical Appliances used in Dentistry." Dr. F. H. Berry, Milwaukee.

"A Talk about Toothache." Dr. C. C. Chittenden, Madison.

"Dental Advertising." Dr. Jas. P. Flaherty, West Bend.

"Dental Ethics." Dr. W. H. Carson, Milwaukee.

"Educating the People." Dr. H. A. Palmer, Edgerton.

"Peculiarities of the Mouth under Plates." Dr. R. E. Maerkelein, Milwaukee.

"Typical Cases of Irregularities, and Treatment of Fractures of the Maxillary Bones," (Illustrated.) Dr. E. H. Angle, Minneapolis, Minn.

"Inlays of Various Kinds, Illustrated by Charcoal Sketches, and Cases out of the Mouth." Dr. G. V. I. Brown, Duluth, Minn.

STATE OF ILLINOIS,)
STATE BOARD OF HEALTH. }

OFFICE OF THE SECRETARY, SPRINGFIELD, June, 1892.

Smallpox in New York City, Pittsburgh, Pa., at several places in Ohio and West Virginia, in Iowa and Michigan, as well as recent cases in Chicago, clearly indicate that this loathsome disease again threatens Illinois after ten years of almost complete freedom from its ravages.

The last smallpox epidemic resulted in panic and quarantine; interrupted travel, traffic and business; closed schools, churches and courts; caused 8,856 cases and 2,978 deaths, and involved a money loss of nearly \$7,500,000—without counting the value of human life destroyed or the permanent disability of many of the survivors.

It is a demonstrated fact that the epidemic continued to increase in extent and virulence until a system of wholesale *Vaccination and Revaccination* was put into effect by the State Board of Health. It is an equally well-demonstrated fact that within twenty days after this wholesale vaccination was well under way there was a sudden and marked decline in the epidemic, which decline continued until the disease died out for want of unvaccinated individuals on which to prey.

Illinois cannot afford another smallpox epidemic—still less can Chicago, with the World's Fair on its hands.

There is only one sure method of prevention.

Vaccination properly performed and duly repeated with reliable vaccine, under aseptic conditions, is incontestably proven to be a safe and positive protection against smallpox.

The Illinois State Board of Health desires to secure this protection for the commonwealth now—while there is yet time, before the smallpox contagion shall have been still further introduced from neighboring communities, or through hordes of unvaccinated immigrants, or by the multitudes attracted by the Columbian Exposition.

To this end the board enjoins upon municipal authorities and upon local boards of health the urgent necessity of steps to secure the vaccination or revaccination of all over whom they have authority.

Ordinances should be passed enforcing this measure upon all school children, public, private and parochial, as well as upon teachers, janitors and others; upon all public employes and officials, and, generally, upon all citizens who may be reached in this manner. Employers of labor, skilled or unskilled, should exact this protection as a condition of further employment. Superintendents of public institutions should cause every inmate, employé and official to be at once vaccinated or revaccinated.

The board will use its resources to secure the end in view.

It will furnish carefully selected, reliable vaccine at wholesale cost, accompanying each package with plain, practical instructions for the operation. To communities unable to purchase vaccine, if any such there be, it will be furnished gratuitously on proper representation of the facts and an agreement to report results on the blanks furnished by the board.

Finally, the board appeals to the public press, as the most effective agency in informing the public as to the necessity and the sufficiency of vaccinal protection against smallpox.

Editors who receive this circular-letter are earnestly requested to publish its substance, or otherwise to urge their readers to act upon its suggestions.

F. W. REILLY, M. D., *Secretary*.

W. A. HASKELL, *President*.

POST GRADUATE DENTAL ASSOCIATION.

The following circular letter has been issued;

The Post Graduate Dental Association of the United States is an organization solely engaged in the work of educating dentists. By different courses of reading

it aims to reach every class of dental practitioners. These courses of reading are divided into pregraduate and post graduate courses, the one designed for the non-graduate, the other for the graduate. The classes organized and to be organized are as follows:

Class A. Two years' course; composed of practicing dentists and students or those who desire strictly practical instruction, who have never attended a regular course of lectures, or a practitioners' course at a dental college, but who eventually expect to attend a dental college, and of those practitioners not mentioned in the succeeding courses. At the close of the term the successful candidate receives a certificate of proficiency.

Class B. Three years' course. Composed of practitioners whose aim is not future attendance at a dental college, on account of age, permanence of location, lack of means or any other cause, but who are desirous of improving themselves and of giving the best service to their patients. This is a combined scientific and practical course. On its successful completion the candidate will receive a certificate of excellence.

Class C. Four years' course. Composed of practitioners who are graduates of dental or medical colleges in regular or special courses, or who have attended a practitioners' course. This is a combined course comprising dental science and practice and the study of collateral sciences. On completion, and the successful passing of a thorough examination, the successful candidate becomes a member of the Post Graduate Dental Association and receives the degree of Fellow of Dental Science.

Class D. Five years' course. Composed of regular graduates of dental and medical colleges of not less than five years' standing and of nongraduates, who (1) have been in active continuous practice not less than ten years; and (2) have completed either course A, B or C; (3) can pass a satisfactory preliminary examination and furnish satisfactory evidence of original thought and research in the domain of dental science. At the end of the five years' course they become members of the Post Graduate Dental Association and must pass a rigid examination, practical, oral and written, before a Board of Examiners, upon whose unanimous recommendation the degree of Doctor of Oristry, will be conferred on the successful candidates.

This in brief, is the outline of the work of the Post Graduate Dental Association. Any one entitled to follow the course of reading of any of the advanced classes may also at the same time be reading in any or all other classes. Class A is now instituted and all desiring to enter it should at once communicate with the manager of the association.

The complete expense of the two years' course is \$9.00. The two books alone and the German silver would cost, if bought by the individual, \$6.00. The amount (except membership fee) may be paid at such times as you may desire. For instance, you can send for Black's Dental Anatomy and your membership fee now, making \$4.25. Within six months send for Evans' work and practical outfit furnished you by the association at a cost of \$2.75; at the end of one year send your membership fee of \$2.00 for the second year, making a total of \$9.00 in two years. If circles are organized, the cost will be reduced, in a circle of two members to \$6.72 each, three members \$5.85 each, etc.

Any information in regard to dental reading, whether you are a member of any class or not, will be cheerfully furnished on application.

Respectfully yours,

POST GRADUATE DENTAL ASSOCIATION,

Masonic Temple, Chicago.

THE DENTAL REVIEW.

VOL. VI.

CHICAGO, AUGUST 15, 1892.

No. 8.

ORIGINAL COMMUNICATIONS.

THE APPLICATION AND INFLUENCE OF FORCE IN ORTHODONTIA.

By C. S. CASE, M. D., D. D. S., CHICAGO, ILL.

The operation of correcting irregularities of the teeth by mechanical force is gradually being placed upon a scientific basis, where even the most difficult cases may no longer be considered doubtful problems, or their perfect restoration more than should be naturally expected from the hands of a dentist who gives this department of his profession its legitimate share of his attention.

This I believe to be largely due to the somewhat modern adoption of the banding of teeth as a means of support to regulating appliances ; which enables one to construct an apparatus that can in most instances be permanently attached to the teeth from the beginning to the end of the operation ; that will possess proper machinery for delivering the force in amount and quality directed and controlled throughout all the processes of change in exact accord with physiological requirements ; and finally to possess means for holding the teeth until they are permanent in their new and regular positions.

It is unfortunate, however, that our literature in this department is far from complete, judging from the most modern publications ; and will continue to be so as long as text-books upon orthodontia ignore as a prime factor to the beginning of every work, the principles of philosophy of force in all its relations to this subject. For if anything is true, the whole subject from a mechanical standpoint of correcting malposed teeth, resolves itself

into a question of ways and means for the utilization of force—its application, transmission, distribution and management along lines of contact and resistance.

Nearly all the literature upon this branch of the subject deals with specifics rather than principles, and consists largely in a vast number of histories of cases in practice, with the particular method of treatment so emphasized by the author that a novice would imagine there was no other way than the one described—whereas there may have been a number of even better ways. Show me a case of irregularity of teeth, and I will study out a half dozen ways for correcting it, many of which as they occur to me will seem to be the only true way, until by continuing the study I am suddenly surprised by another and far more practical way which arises in thought.

We are all more or less influenced in our professional lives by others who perhaps have made a special study of some particular branch, and whose teachings we are glad to accept as a guide in our daily practice; yet in every department there will arise individual peculiarities which demand individual thought and variation of treatment; and what is of peculiar importance in this department:—there are rarely two cases of malposed teeth so alike that each does not demand some peculiar and very important variation in the correcting apparatus. Even where the teeth in some case presented for treatment, seem to be situated in exactly the same position shown in the illustration of a similar case in text-book or periodical, there may be other and equally important conditions—not shown or mentioned by the author—which make the two cases decidedly different, and the method he has successfully used quite impractical for us.

To those therefore who hope to be eminently successful in this department I wish to emphasize the importance of thorough training in the foundation principles. Know well the possibilities presented by nature; the principle of force and its proper application and management; then if you will adopt some system in the main whereby the appliances may be constructed under your immediate supervision—permitting a freedom of ingenuity not possible in an attempt to use some particular set already in the market—a far more perfect treatment of malposed teeth will be given, suited to the needs of particular cases in hand.

In the short time allotted to a paper I shall attempt to give only

a few thoughts relative to the principles of force in the correction of irregularities of the teeth, dwelling more particularly upon the influence which different ways of attaching the appliance have in the production of certain movements—on the one hand to obtain all the advantage which the force employed affords in producing the greatest amount of movement, and on the other, of so distributing or managing the anchorage force that little or no movement of other teeth is produced.

In correcting the positions of malposed teeth, it should never be forgotten that the important and indispensable part of the operation is to so regulate the force that the normal functions and healthful conditions of the teeth and surrounding tissues are preserved, and that nature will permit their movement, physiologically, only so rapid as she is able to take care of the broken down tissue of retrogressive metamorphosis, caused by pressure of the tooth upon the walls of the alveolar socket. The rapidity of the movement will be influenced largely by the age of the patient, and differ as other things differ with people.

The point which interests us under the caption of this paper relative to the application of force may be stated as follows: as soon as the applied force overreaches the possibilities of natural (and I may say physiological) change—the surplus is liable to spend itself in producing some undesired and unlooked for condition. In other words, nature can work only so rapidly, and any attempt to force her beyond her natural powers will result—if not in disaster—certainly in a misdirection, and transferal of the force to other parts which should not, and would not, otherwise be disturbed. For instance, it is not always possible to move the apices of the roots of teeth in the same direction that we are able to move the crowns and it is usually quite important to avoid moving them in an opposite one.

On account of the relatively hard surface layer of alveolar process there is always a tendency for it to act as a fulcrum over which the tooth is tipped; but fortunately the apical region of bone in which the roots are imbedded usually presents sufficient resistance for it to remain as the true and immovable fulcrum of the lever so long as the force is not increased beyond the powers of absorption in other portions of the socket. The moment this does occur, however, the peripheral surface of the alveolus becomes the fulcrum while the load is delivered at the end of the root in the opposite

direction, and in exact proportion to the surplus force. If we admit that the apical portion of the socket—blending as it often does with the cortical layers of true bone—presents greater resistance to changing the position of that portion of the root, there can be but one conclusion, viz: So long as the pressure is kept within physiological bounds, it makes little difference in regard to the length of the arm of the lever, or, in other words, whether the force is applied near the occluding surface of the teeth or at the cervix, providing always that it is not restricted in its action by the method of attaching the appliances.

As an illustration, notice the action of the force of an oar in propelling a boat in still water. If only sufficient pressure is used against the oar to permit the water to pass from in front of the slow-moving blade, there will not be sufficient pressure at the fulcrum, or oar-lock, to overcome the inertia of the boat; but immediately upon the force being increased above the possibilities of the water to get out of the way, the fulcrum of the lever is transferred to the water and the load of surplus force is delivered at the oar-lock with a movement of the boat. Let me give another and

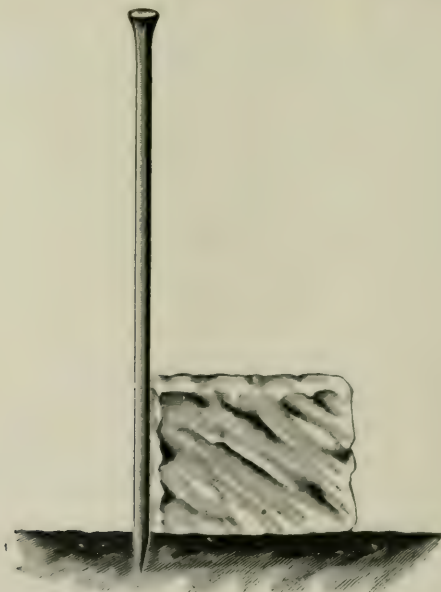


FIG. 1

perhaps, more forcible example. Drop the point of a crow-bar into the ground at the side of a large cake of ice fixed immovably in place. (See Fig. 1.) Now, if we heat the bar and press it against the cake with only sufficient force to permit the ice to melt in front of it, little or no change of position will take place at the front of the bar, but the moment we increase the pressure above the melting possibilities of the ice, the fulcrum of the lever is transferred to the cake and the load of surplus force is delivered at the point of the bar, with a tendency in proportion to the pressure of forcing it laterally in an opposite direction in the ground. This illustration is only one of many conditions which may and often are produced by excessive or misapplied force in operations for correcting irregularities of the teeth.

It must never be forgotten that the exact load or measure of kinetic force used in the movement of a tooth must always be expended in another direction upon a rest or anchorage.

It has been the common custom for a great many years of distributing this second force upon a broad surface, by means of a plate where it was received partly upon the jaw and partly upon a number of teeth producing no material change in their position. With modern methods for correcting the position of malposed teeth there is not often a need for an anchorage plate, and there are many reasons for avoiding its use—which it is not necessary for me to mention here. Suffice it to say that the single reason alone of the instability of such anchorage, making it impossible to utilize and properly direct the positive and intermittent force of a screw, would be sufficient for me to employ other means for this purpose, which are now amply supplied by attaching the appliances to bands permanently cemented upon the teeth.

Perhaps the most scientific and important possibility in the utilization and management of force is where two or more malposed teeth are so situated that the force which would otherwise be expended upon a static anchorage for the movement of one, is neutralized and rendered inert, by an equal force for correcting the position of another or others. A single form of this is shown when a wedge, spring, or jack is used to separate two teeth approximal to each other or on opposite sides of the mouth, each requiring the same magnitude of force. But if a proper amount of study were given to every case, and sufficient ingenuity employed in the construction of the apparatus, a vast variety of

changes would be found possible, and often with little or no force expended upon teeth other than those required to be moved. Under this head I wish to mention an implement which I call a "jack and traction screw." It was introduced at the First District Dental Society of New York City in, 1890, and published in the April number of the *Cosmos* of that year, but I have since made an important addition to it which greatly enlarges its usefulness. See Fig. 2. With this implement the anchorage force used in the

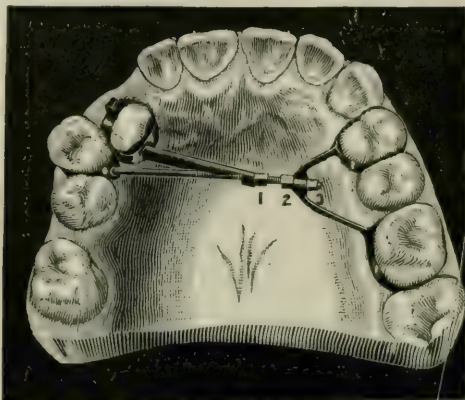


FIG. 2.

movement of one tooth is rendered inert by an equal force expended upon another tooth in an opposite direction. Originally it was intended to move two teeth which were approximal or situated near each other, the one standing within the arch and the other without, both requiring the same magnitude of force to correct their positions. By means of the improvement if one tooth takes its position now before the other the force can be immediately transferred from it to a static anchorage on the opposite side of the jaw, or to some other tooth requiring the same direction of movement, after which the apparatus can be made to continue its work until the other tooth has been forced to the desired place.

The improvement or addition consists in resting the end of the screw bar, loosely in a short tube soldered to a static anchorage bar, or to a bar or contrivance extending from some tooth which requires to be moved or rotated, and which is brought into the field of work to utilize the force of inequality, which would otherwise need to be transferred to—and, therefore, lost in—a static an-

chorage. Then, by adding two extra nuts to the screw bar, the force can be perfectly directed and controlled. For instance, in Fig. 2, if the bicuspid comes to place before the cuspid has been forced out from its inlocked position, the nuts 2 and 3 are tightened on either side of the anchorage bar fixing it immovably to the anchorage teeth, while by operating nut 1 the cuspid is continued to be forced to place. If on the other hand the cuspid goes to its place first, nut 2 should be loosened and nut 3 made to do the work of pulling in the bicuspid, while nut 1 is kept sufficiently tight to

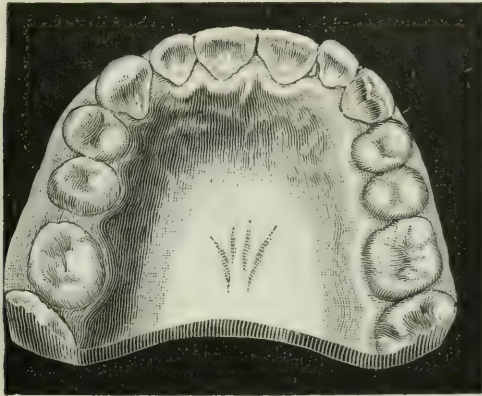


FIG. 3.

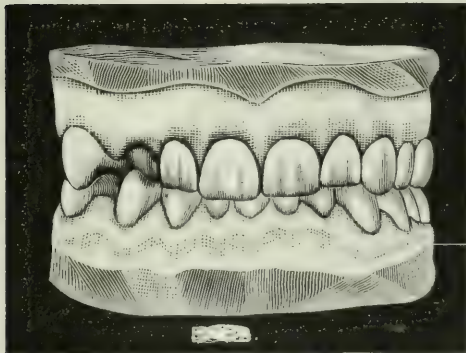


FIG. 4.

hold the cuspid in place. Fig. 3 represents the teeth after correction. Fig. 4 shows the original position of the cuspid inlocked by the lower bicuspid.

Another very important application of the jack and traction screw—where it can be used—is in torsion, and especially when the tooth to be operated needs also to be pushed out or drawn back into the arch.

A thin band soldered to the end of the bar is passed around the tooth and buttoned to the cemented band, while the base of the jack rests against a lug or series of lugs on the opposite side. As the nut is turned, a traction force is extended upon one side of the tooth and an equal jack force upon the other, rotating the tooth upon its long axis which is the only true way of torsion. Other motion if required is produced by operating the nuts at the end of the bar. See Fig. 5.

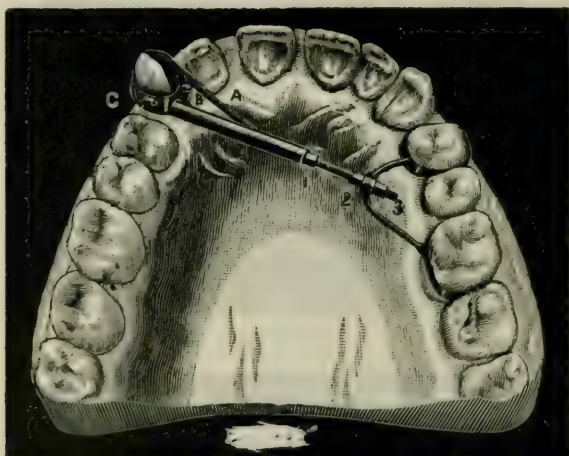


FIG. 5.

In regard to methods of attaching the appliances to teeth to produce required movements or static anchorage, I desire to have it understood that I claim no originality. My purpose only is to emphasize some of the important rules laid down by others.

In order to bring these ideas practically before this convention I have constructed a large model of the alveolar arch in soft clay, into which I have inserted large wooden teeth with bands and appliances attached, with the view of showing the influence in motion and direction which different ways of attaching the appliances will tend to produce upon natural teeth with a similar application of force.

It will not be necessary for me to enter into a detailed description, in my paper, of different methods already published, although I am sorry to say that no author has yet given a perfect analysis of the distribution, management and utilization of force which different ways of constructing regulating appliances exert. I shall attempt to show the practical features, however, by black-board illustrations and by operating the model, describing the various methods as I proceed.

THE ENAMEL AT THE GINGIVAL LINE, WITH LANTERN EXHIBIT.

BY T. E. WEEKS, D. D. S., MINNEAPOLIS, MINN.

INTRODUCTION.

The purpose of this paper is to show the *form* of enamel and how it encapsules and protects the dentine, placing especial emphasis upon that portion beneath the free margin of the gum, applying the knowledge gained from this study to the construction of bands or collars which form the basis of gold or gold and porcelain crowns,

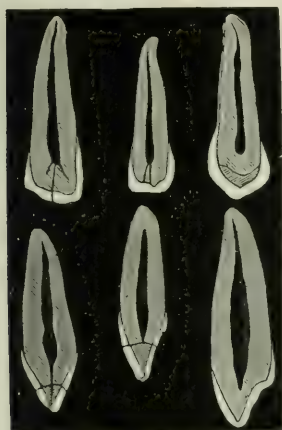


PLATE I.
Superior Incisors and Cusplids.

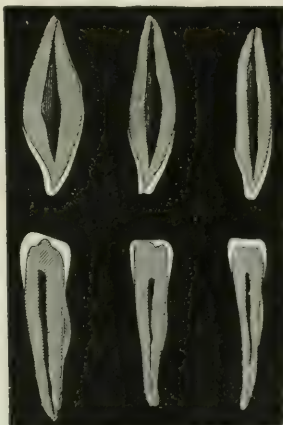


PLATE II.
Inferior Incisors and Cusplids.

as in my opinion that portion of artificial crowns which is covered by the free margin of the gum should imitate as nearly as possible the natural protector of the tooth at this point.

I have endeavored to so select and present the illustrations that the points will be clear with but little comment.

All the teeth present in a labial or buccal view, the form of truncated cones, the bases presented to the line of occlusion; the cutting edges or grinding surfaces (morsal surfaces of Kirk). The molars and bicusplds viewed mesially or distally present the same



PLATE III.

First Bicusplds, Superior and Inferior.



PLATE IV.

Second Bicusplds, Superior and Inferior.

general form, while the incisors and cusplds, in this view, present the form of cones, their bases presented rootward, uniting with the conical roots at or about the free margin of the gum. See plates I. to VI. inclusive.



PLATE V.

First Molars, Superior and Inferior.



PLATE VI.

Second Molars, Superior and Inferior.

The crowns of all the teeth, or that portion above the gingival line, are covered with and protected by that substance which we know as enamel, commencing with a *thin* edge at the gingival line,

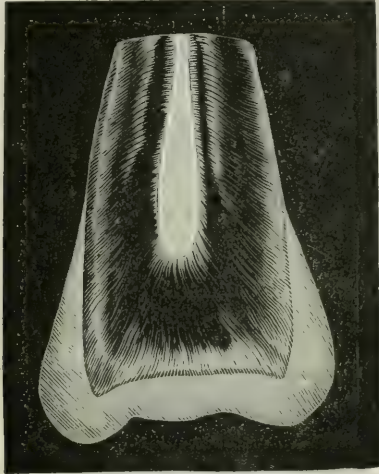


PLATE VII.

Section of Superior First Bicusp. Buccal View (3 in. objective).



PLATE VIII.

Section of Superior First Bicusp. Mesial View (3 in. objective).

gradually becoming thicker as it approaches the morsal surface. See plates VII. and VIII.

It also gives to the teeth the form above mentioned. The thickness of the enamel is in a direct ratio to the amount of work which the tooth from its location is expected to perform, being thinnest in lower incisors and thickest in molars.

The dentine when denuded of the enamel presents, in a labial or buccal view, either the form of a parallelogram or a truncated cone with its base presented to the gingival line. In a mesial or distal view the incisors or cuspids present the form of cones, and the bicuspid and molars those of truncated cones with their bases at the gingival line.

In the labial or buccal view we find exceptions to this rule in the incisors and bicuspid. See plates I. to VI., also plate IX.



PLATE IX.

Lateral Incisor. Labial View. Denuded of Enamel on Mesial Surface (3 in. objective).

The enamel at the gingival line terminates in a thin edge, meeting the cementum at this point, and usually we find the cementum *slightly* overlapping the enamel. In examining a large number of specimens we are struck with the sudden thickening of the enamel, especially in those sections presenting a labial view. See plate VII.

As the rods of which the enamel is composed have their general direction at right angles with the surface of the dentine, especially upon plane surfaces, and as the tendency of the enamel rods is to separate in thin chips from the mass, under well-directed force with properly-shaped instruments, when a break has once been made, we find but little difficulty in denuding the dentine of enamel when the tooth has been cut or broken off near the gums.

Our illustrations teach us that when this is thoroughly accomplished we have a properly shaped root for the perfect adaptation of collars or bands, with the exceptions noted. They also teach us where to look for these exceptions.*



PLATE X.

Plate X, shows the form a crown would assume were we to give it the exact form or contour which the tooth presented before being denuded of its enamel. This was traced from a negative of a sectional view of a superior bicuspid, and follows the lines exactly.

To one who has studied the interproximate spaces the importance of following this contour (in perfect specimens) is patent. We should at least finish the edge of the collar, which is presented rootward in a rounded bevel, *all* on the *outside*, and after adapting to the root, give it an inward inclination by rubbing it on the outside with a burnisher. In regard to *finish* of this edge, observation teaches us that a smooth edge having a proper bevel, even though

* In selecting the sections for illustration I purposely chose those which presented, before cutting, the most pronounced bell crowns.

it does not fit the root *snugly* throughout its whole circumference, will cause much less irritation to surrounding tissue than one which may fit closely, in which proper attention has not been given to bevel and *smoothness* of edge.

Having considered the subject from the point afforded by sectional views, we come to another consideration no less important, and which if overlooked will result in failure, even after having paid close attention to the points already noted, *i. e.*, the curvature of the gingival line.

On the labial or buccal and lingual surfaces we find this line presenting a curvature whose convexity is rootward, and which is paralleled and indicated by the free margin of the gums; while on the mesial and distal surfaces the convexity of the curvature is toward the morsal surfaces, and is not so closely paralleled and indicated, as the festoon of the gum is more sharply convex, and the distance from gingival line to free margin greater than upon the other surfaces. This shows that, while the collar may extend farther under the gum upon the mesial and distal surfaces than upon the others, it should follow closely the outline of the gums, thus avoiding pressure at any point.

TOBACCO, ITS USE AND EFFECTS.

BY L. L. DAVIS, D. D. S., CHICAGO, ILL.

When this subject first suggested itself as a topic of some interest to the profession, I expected to dilate on its useful and beneficial properties as a preserver of the teeth, but the greater the amount of literature conned to support me in that idea the more strongly did I become impressed with the fallacy of such a position.

Tobacco is described in Farquarson's Therapeutics, as a well-known member of the *Solanaceæ*, and its most important constituent, nicotin ($C_{10}H_{11}N_2$), an alkaloid somewhat resembling conia, but which, among other properties, is more readily soluble in water.

Phillips describes it as possessing two active ingredients—nicotin, the alkaloid, which is present in the leaf, and an empyreumatic oil, which is generated only in combustion.

Nicotin was at one time considered as the sole agent in producing poisonous effects. More recent researches have rendered it

at least probable that tobacco smoke owes very little of its potency to nicotin, and very much to the combustion products, which consist of resinous and fatty acids, hydrocyanic acid and sulphuretted hydrogen, pyridine and ammonia; of these, pyridine seems to be the most powerful.

Pyridine and the other combustion products of tobacco seem only to differ from nicotin in their action, so far as that they are milder and less rapid in their toxic action.

It has been stated by recent experimenters that nicotin is not at all present in tobacco smoke; and it is certain that the empyreumatic products are powerfully narcotic.

It is not my purpose to enter into a discussion of the physiological and therapeutical action of the alkaloid, except to state that it is a powerful base, and completely neutralizes acids, but to note some of the effects of tobacco smoking, chewing, etc.

I have looked in vain through our various text-books for a thorough treatment of this subject, and it is with a little disappointment I note the brief mention made of a substance so generally used. Perhaps the various writers of text-books were addicted to the habit, and did not wish to pry too closely into, or explain to its fullest degree the results of the use of tobacco.

All users of the weed have at some period of their life experienced the physiological effects of tobacco. Nausea, giddiness, vomiting, cold sweatings and an exceedingly feeble pulse are the ordinary results of first attempts to smoke.

The smoke habit once formed, chewing may be added, or, if neither of these suit, snuff-taking may be resorted to.

Much has been said of late regarding the antiseptic properties of tobacco smoke, and the experiments of Miller and Black prove without doubt its potency as a germ destroyer, the smoke from the first, third or last quarter of a "Colorado Clara" cigar being found amply sufficient to sterilize 10 c. c. of a beef-extract-sugar solution previously richly infected with caries fungi.

Dr. Black, from whom I quote the last statement, also adds, "In consideration of the strong antiseptic power of tobacco smoke we might be inclined to infer that tobacco smokers should never suffer from caries of the teeth; it is evident, however, that there are very many points in the dental arch to which smoke never penetrates."

To this, more arguments can be added why we should not expect to see the teeth of tobacco smokers free from caries.

The continual flow of saliva and its expectoration as soon as laden with the combustion products, would prevent antiseptic action. The retention of food particles within the cavity or at the point where the caries fungi are working, practically guards them against disturbing influences, and our observation shows that neither tobacco smoking or chewing prevents caries.

It may retard or render more slowly the ravages of decay, but sooner or later the services of the dentist are needed.

Its well-known sedative action has been and is the great argument in its favor by those accustomed to it. Griesinger says, "it aids the easy flow of ideas and equalizes the temper;" thus, in persons suffering from mental derangements a desire for tobacco should be encouraged for even such habits, unimportant in themselves, may assist the mind to resume its former thoughts, and follow in its former courses.

In tobacco smoking, the coating of the teeth with combustion products may prevent caries.

Tobacco smoke has been recommended in catarrhs of the eustachian tube and tympanum, by forcing the smoke into the interior of the ear. It has also been found beneficial in respiratory diseases, as asthma, whooping cough, etc.

Trousseau speaks of the use of tobacco in toothache, washes of the decoction, friction of the gums with the extract of the plant, being very helpful, more so than the pipe or quid.

Berhaave directed the application of fresh tobacco leaves to the forehead and temples for neuralgia.

The same remedy, or better the decoction or extract, is useful in calming the pains of gout or rheumatism when superficial.

Tobacco, in small doses, used with perseverance, has a stimulating action on the brain, cerebellum and spinal medulla, in cases of paralysis. It has also been successfully used in incontinence of the urine due to paralysis of the sphincter of the bladder, as in paralysis of the lower limbs.

In certain headaches, especially those which seem connected with a state of extreme dryness of the pituitary membrane, the use of snuff has been recommended, while in many other persons the habit of continually taking snuff keeps the mucous membrane in a state of hyperæmia, and causes headache.

Those who suffer from chronic affection of the nostrils, and continue to use powdered tobacco, expose themselves to many

accidents, cases of cancerous ulceration of the skin, usually in the eyelid or on the side of the nose, have been noted—due to no other cause.

On the other hand, tobacco may be of use in increasing the nasal secretions, softening them and aiding respiration through the nose.

The lacrymation which is caused by hardening of the mucous of the lower part of the nasal canal may also be treated with advantage by snuff; this explains the saying, that tobacco clears the sight.

In chronic ophthalmias it is useful as a revulsive.

The evil is close to the good, for the people whom the powder of tobacco irritates too much, diseases of the nasal fossæ may supervene, which, communicating with the lachrymal ways at last produce tumors or fistulæ.

In tobacco chewing, the only probable good effects, come from the continued use of the teeth in mastication, tending to a stronger alveolus, and perhaps by the frequent bathing of the teeth with a solution of nicotine, a certain proportion may be absorbed by the tooth structure inhibiting the action of caries.

One of the most often noted results of tobacco chewing, is mechanical abrasion, and the same habit is also productive of erosion, especially at the necks of the teeth.

Those of you who have marked the character of teeth presented to us for restoration by tobacco chewers, will bear me out in this testimony. A yellowish-brown stained and softened condition of tooth substance, oftentimes running completely around the teeth, the pulps sometimes devitalized, and a condition of affairs that call for our best skill and judgment to repair the waste.

Recession of the gums invariably results from this habit, and is very marked in persons long addicted to tobacco chewing, as is also derangement of the alimentary canal, dyspepsia, etc.

Of the more chronic forms of mischief which are said to be produced by tobacco smoking, are granular inflammation of the fauces and pharynx, gingivitis, amaurosis, from atrophy of the retina; color blindness is not uncommon in smokers; chronic dyspepsia is at least aggravated by the waste of saliva which should have gone to assist digestion, and is undoubtedly a frequent result of prolonged excesses in tobacco.

The occurrence of angina pectoris as the result of the prostrating influence of great and prolonged excess upon the heart has been noted.

General nervous depression is frequently produced, showing itself in restlessness, insomnia and a tremulous condition of the limbs, not unlike the phenomena of chronic alcoholism. Gingivitis is, to my mind, one of the serious results of excessive smoking.

We frequently note in cases of pyorrhœa alveolaris, the inflamed condition of the whole mucous membrane of the mouth, and I do not believe I draw too greatly on my imagination in stating that pyorrhœa may result from the excessive use of tobacco.

The teeth affected in such cases are those that come in contact with the cigar, or the palatal surface of molars which receive the full blast of the heat generated in smoking.

It is certain that in the treatment of pyorrhœa alveolaris, in tobacco users, we cannot carry it to a successful issue unless the patient abstains from, or, at least, moderates the smoking.

Another theory may here be advanced. By long continued irritation of the mucous membrane, is there not a possibility that the secretions are altered, and the saliva itself become a factor in producing pathological changes?

There are several well-known cases of epithelioma on record as the result of the tobacco habit; of late years there have been a number of cases recorded of insanity and death from cigarette smoking.

Heredity is a factor I have not found advanced in connection with this subject, but if the parent has produced in himself, by the tobacco habit, nervousness, derangement of the alimentary canal, spinal diseases, heart failure, together with the minor disorders, the fundamental truth that type transmits type must hold good in this case, and may not the results in the progeny be such as renders the child liable and readily susceptible to influences that otherwise might not affect the general system?

CARE OF THE DECIDUOUS TEETH.*

BY DR. H. J. COLE, NORFOLK, NEB.

This class of patients require more tact and skill for successful management, and is probably more of a strain on the operator than any other class. But they must be served, and if this paper

*Read before the Nebraska State Dental Society.

will draw out in discussion the methods adopted by our best and most successful operators, as how best to serve them, the object of the writer is accomplished, I shall make no pretense at anything new or startling, but simply outline my method of dealing with the little ones from the time they are usually brought to us—seldom before the fifth or sixth year—and in so doing hope to be as practical as possible. Could we reach the ears of all parents and impress upon them the great necessity of the constant care and attention the teeth of their offspring demand, and the suffering that may be prevented by early and frequent visits to the dentist, then our work with them would be comparatively easy as well as very pleasant.

Our attitude toward this by no means small percentage of our clientèle is one that should receive considerable attention. There is too much inclination with busy practitioners to pay but little attention to the children when they tremblingly enter our offices. But if approached rightly and confidence once gained, there is no part of our practice that is more satisfactory, and for which more blessings will be bestowed, and in the long run more remunerative.

Confidence of the child once gained insures the confidence and patronage of the family.

If that cannot be done at the first visit, better a great deal dismiss the little one for the time being, and make an appointment for another day. We must study children closely, being ever kind, yet firm, using no deception.

The trouble we have with so many children is due in a great measure to their parents or those with whom they are closely associated so often relating in the presence of the child their experience while in the dental chair, until the very presence of the dentist on the street causes a thrill of horror to creep over the little frame.

The next thing we see the same personage entering our office with the young hopeful crouching beneath the folds of her skirts, and all the while assuring the child that it "won't hurt."

The first thing then is to allay the child's fears if possible. If the work necessary to be done should cause pain, say so kindly, and if the parent is inclined to give more trouble than the child, you should not hesitate to invite her to occupy the waiting room.

After the first visit, if another is necessary, I invariably encourage the child to come alone the next time, and usually succeed. If not entirely alone, accompanied by a schoolmate or playfellow.

Nothing adds so much to a little fellow's courage and importance as to be able to show his playfellow what he can endure.

Occasionally the disposition is such that it may be necessary to use force to compel submission to some slight operation—such as the removal of a very loose tooth to give room for the permanent one that is being forced out of position.

And in this connection I would say, cultivate skill with the fingers and remove as many such as possible without the aid of instruments, and when once understood you will be surprised at the number that can be displaced in such a way.

For such operations, if the child's fears cannot be allayed, I think it is better as a rule to use a napkin saturated with chloroform held to the nose for a few moments.

Whatever is done we should aim to make a friend of the child before he leaves the office. Next the eruption of these teeth should be superintended by a competent dentist. With all due respect to the knowledge and skill of our family physicians, in infantile troubles of doubtful diagnosis the dentist should be consulted as to whether or not the trouble may not arise from dental irritation.

We should endeavor to impress upon the parents the great necessity of looking after these teeth and not allow them to decay down to the gum margins without an effort being made to preserve them. The natural way is for these organs, by the absorption of the roots, if not actually to fall out of the way of the permanent ones, to become so loose that they are easily displaced. If for any reason such absorption does not take place, under no circumstances should the first one be allowed to remain in place till the second is making its appearance through the gums, causing irregular permanent ones.

Neither should the first ones be removed too soon for obvious reasons. Whilst a great deal of the alarming prevalence of decay is owing to lack of function, yet instruction should early be given in the use of the toothbrush, and those in charge of children should be impressed with the importance of frequent and thorough cleaning of the teeth as well as the whole body.

After their eruption, they should be examined from two to four times a year and such attention given as the case may require. When the time comes for their removal, the skillful dentist is the proper person to perform such operations.

We come now to the treatment of caries in such teeth and take it for granted that all are agreed that such should be filled.

For cavities of decay where the pulps are not exposed in preparation for filling use sharp spoon and battle-ax excavators removing the decayed tooth substance as carefully and thoroughly as possible. I would seldom if ever use the engine in such cases, as the cavity can be prepared with much less dread, and almost as quickly with the proper excavators. For such cavities on the grinding surfaces usually use amalgam, and in approximal cavities where a sufficient undercut is easily obtained I would also use amalgam, but where I cannot get sufficient undercut without causing pain, quick setting cement, and frequently gutta-percha is the best thing to be used. Often in approximal cavities where both teeth are involved good results are obtained by using gutta-percha, pressing it into the cavity, uniting both teeth by the filling.

When the pulp is exposed and badly inflamed, causing paroxysms of pain to the little sufferer is the trying time both for operator and patient. In such cases always the first thing is to relieve the pain, and by washing the cavity with warm water, drying and applying a little oil of cloves the desired result will usually be obtained. Have also had good results with campho-phenique. In nearly all such cases would keep the cavity sealed with occasional changes in the dressing till the pulp dies, then remove and fill the canals with chloro-percha and the cavity of decay either with gutta-percha or amalgam.

Where there is a putrescent pulp causing an abscess to form, accompanied by profuse swelling of the surrounding tissues, as in the former case, the first thing is to relieve the pain, though the method of relief be quite different.

Usually the desired result may be obtained by removing the debris from the cavity opening into the pulp chamber and letting the pus escape. Then by applying a dressing of oil of eucalyptus or campho-phenique, seal up the cavity temporarily and dismiss the patient for a few days.

As a rule at the next visit the roots and crown can be filled. Then proceed as before described.

If the pus cannot be gotten rid of in the way indicated it may sometimes be advisable to open through the gum; but I would prefer, if the child be 7 years old, for either the first or second molar, extraction rather than the latter method. For it is a clinical fact if either temporary molar abscesses and is removed as early as the seventh year, before the eighth the bicuspid is

making its appearance. In all operations on the temporary teeth the operator should be very careful not to allow an instrument to slip, any medicine to touch the tongue, or anything that will shake the confidence of the child. It is very seldom that the rubber dam can be used, so we are obliged to resort to other means for keeping the tooth dry. Very small soft napkins or rolls of absorbent cotton carefully applied are quite efficacious.

But don't do anything that will make the child imagine that he is going to be choked to death. Better fill the tooth even if a little moisture does get in, than to unnecessarily frighten the patient.

CROWN AND BRIDGE WORK.*

BY GEO. S. NASON, D. D. S., OMAHA, NEBRASKA.

I fully appreciate the fact that writing on any subject is out of my line, but circumstances over which I had no control forced me into it, so my dear brethren at the close kindly take into consideration the fact that this is my first offense, deal with me gently and I will promise in the future to avoid all such dilemmas.

The first step, as you all know, in crowning a root is to get it in proper shape by the use of antiseptic medicines and filling the canal. I have had marked success in filling root canals with Caulk's cement and iodoform, half and half mixed into a thin paste, inserted by the use of a thoroughly saturated cotton string, owing to the odor attached have given it up and returned to gutta-percha points in connection with chloro-percha which answers the purpose admirably. Take an accurate impression of the root and adjoining teeth, as a rule modeling composition is all right, but once in a while I have to resort to plaster. It is a wise scheme in all cases to take a measure with binding wire as it prevents possible mistakes.

If there are articulating teeth take a wax bite, mount on the articulator and carve up to suit the case, trim and fill in or out as the case may be so that there are no undercuts and get a good mould. I find zinc as a rule is the best material for a die, as it is not easily misshapen in swaging. It is nearly always necessary to smooth it a little with a file. Make a model of heavy tin and cut and solder the band. I use gold coin rolled out in No. 31 standard gauge and solder with 20 k. solder.

*Read before the Nebraska State Dental Society.

For bridge work, in cases where sound teeth are capped, shape up with corundum wheels and take impression in plaster of Paris and pumice or sand, equal parts of each, dry out thoroughly and pour zinc.

Where roots are capped the same process as in crowns applies, fit the crowns, take the wax bite without disturbing their positions and then get an impression, drawing the crowns off in it, varnish and oil. After it has thoroughly hardened, mix plaster and pumice or sand half and half and pour, being sure the crowns are filled separately. Place the bite in position, mount on articulator, grind facings and caps in position, invest and solder.

For the crowns, use coin gold hardened with platina, melt the gold and add platina in small thin strips, as long as it is taken up rapidly, drop in muriatic acid and roll out to No. 31 standard gauge, soldering with coin. For final soldering use No. 20 k. solder, polish and set on the root.

PRESIDENT'S ADDRESS.

BY DR. A. W. NASON, OMAHA, NEBRASKA.

TO THE NEBRASKA STATE DENTAL SOCIETY: I am not much of a speaker but perhaps a short review of the past history of the society may be of interest to you.

On August 25, 1868, was organized at Council Bluffs, Iowa, what was known as the Missouri Valley Dental Society. A few of us here present were made members at that time. In 1876 the meeting was held at Drs. Charles & Paul's office, Omaha. Dr. Roseman acting as President, in the President's absence; Dr. F. M. Shriver being Secretary and Treasurer. In this year your humble servant became a member.

At that meeting we thought it advisable for Nebraska to start a society of its own and be considered of more importance in the American Dental Association.

The first annual meeting of the Nebraska State Dental Society was held at the office of Dr. King, in Lincoln, 1877. The President, Dr. Charles, being absent, Vice President S. H. King occupied the chair, six members answered to roll call.

The second meeting was held in 1878 at the office of Dr. Roseman, Fremont. Dr. Roseman held the combined office of Secre-

tary and Treasurer; Dr. King, President, in the chair. Only four of the faithful being present.

We have kept on with moderate success for fifteen years, meeting annually, and have from fifty to seventy-five members at the present time. We have lost several of our number; some by death, some by change of residence, and last but not least, some by their own carelessness in neglecting to keep up their dues. It is to be hoped we may not lose any more the following year by the same causes.

Some dentists say when we ask them to join us, I would, but so and so belong. The most foolish excuse in the world, and others say, I don't think I will go they have such a poor programme. The thing to do is for such persons to be at the meetings and make his objections. He might be able to start a good discussion, just the thing that is needed. If any one has an idea it is an easy matter to arrange the programme, let him ask Dr. Cole, or try it himself. Each and every dentist in the society should lend a hand to make *every* meeting a success financially as well as intellectually. If we are well fixed, to use a common phrase, we can call on the best of talent in our profession and make each meeting more and more entertaining and instructive.

My ideas you will find expressed as to the advancement of State societies in a circular which I trust you have all received from J. N. Crouse, Chairman Ex. Com. of the American Dental Association.

I hope to see you all, or as many as possible, at the World's Fair meeting. I have served as your President twice. I thank you kindly for the honor and if I have been of help or a detriment to you it is for you to decide.

PROCEEDINGS OF SOCIETIES.

SOUTHERN DENTAL ASSOCIATION AND TENNESSEE DENTAL ASSOCIATION.

The Tennessee Dental Association was called to order at 9 o'clock A. M., July 26, 1892, by Vice President S. B. Cook. F. A. Shotwell, of Rogersville, was named as temporary Secretary.

In view of the meeting of the Southern Dental Association, the State Association decided to adjourn, after attending to routine

work, and resolve itself into a Committee of the Whole to entertain the sister association.

A committee consisting of Drs. J. Y. Crawford, R. R. Freeman, R. B. Lees, W. T. Arrington, and S. B. Cook, was appointed to arrange a banquet at the Inn. The meeting then adjourned until afternoon, as the Southern Dental Association was called to order.

In the afternoon, the State Association reconvened, and the following officers were elected.

President, S. B. Cook, of Chattanooga; First Vice President, W. W. Jones, of Murfreesboro; Second Vice President, W. J. Morrison, of Nashville.

The Executive Committee was named as follows: S. B. Cook, J. U. Lee, and S. A. Pope. All of these officers serve one year.

"In view of the delightful climate and unsurpassed hospitality of the people" the association unanimously agreed to hold its next meeting in Chattanooga.

A membership Committee, consisting of Drs. W. W. Jones and R. B. Lees, was appointed to serve one year.

All papers prepared for the State Association were ordered turned over to the Southern Association for consideration, and the State Association adjourned to entertain the Southern delegates.

For the twenty-third time the annual session of the Southern Dental Association was called to order at 10 o'clock of the same day. President Gordon White presided.

After prayer by Dr. Jonathan Taft, Dr. L. P. Dotterer was elected Secretary *pro tem*.

On behalf of the association, Dr. J. Y. Crawford presented a fine silver-mounted gavel to the President, who accepted it in a graceful speech.

H. T. Olmsted, on behalf of the Chamber of Commerce, welcomed the members to Chattanooga, and he was followed by President D. R. Stubblefield, of Nashville, who welcomed the Southern Association in behalf of the Tennessee Association.

To these addresses Dr. Geo. J. Friedrichs, of New Orleans, made a fitting response.

President Gordon White then read his address, which was as follows:

Gentlemen of the Southern Dental Association:

I purpose to bring before you at this meeting several subjects of interest to our profession. The one I deem of greatest impor-

tance has been talked of, in an undertone, by many of us for a long time. We should have no secrets in our professional family—the subject is professional dignity, or rather lack of professional dignity, for the subject is too broad for me to touch on any but abuses known to all.

“Every profession has its scum,” says a noted Frenchman. Alas, that those whom in the South we term good men should place themselves on a level with that scum by their methods of advertising. True, it is often only a newspaper interview that catches the eye as we glance through the paper, but it is an advertisement none the less. In the secular press of one section we find a column given the dentist who has performed, what he considers, a very remarkable operation; in that of another section a column and a half is required to properly describe the beauty and perfectness of a certain piece of extensive crown and bridgework; while in still another we read not only of the wonderful inventions of our brother but also of the architecture and furnishings of his office. In one locality we find a college graduate asserting his skill in every known branch of the profession and guaranteeing his work; in another, the familiar poem, “Mary Had a Little Lamb,” adapted to the requirements of a dental advertisement. Such advertisements are usually accompanied by broad headlines and not infrequently by a picture of the remarkable individual.

Gentlemen, need I tell you that members of our association engage in this reprehensible practice? Is it professional? Is it dignified? Does the profession approve it? Does it win public respect? A prominent man who for twenty years has advertised, said to me in a recent conversation, that he did not remember a single desirable patient who came to him through his advertisements.

Why is it that we are so frequently confronted by such advertisements? Are not the schools primarily responsible for this? One reputable (?) college advertises in the newspapers and holds out as an inducement to the uninformed would-be student the fact that the dental graduate is now recognized by the medical profession as occupying the same level as the medical graduate, and further that their graduates at once step into a lucrative practice, making in ready money so many dollars a day. Another advertises for infirmity patients and holds not even church pews too sacred for the desecration of its handbills. Do such advertise-

ments on the part of the schools give the students a correct idea of the dignity of our profession?

The student while at college should live in an atmosphere of ethics. Does he? It is generally understood that there is one lecture on ethics, delivered usually by the dean at the close of the term, but perhaps not more than one-half of the students hear it.

A worthy professor calls attention to the fact that a student, as a mirror, reflects the idiosyncrasies of his preceptor. What shall we say when a graduate from a college, presumably reputable, with the certificate of the State Examining Board, locates in a town or city and at once calls attention through the medium of flaming handbills to his "New Dental Parlors" and extraordinary low fees? Does he not as a mirror, reflect the college from which he comes? Are we not agreed that by both precept and example the colleges should sustain and increase our dignity? Are such practices (of both dentists and schools) consistent with our code of ethics? If they are, should not the code be revised? If they are not, should we not feel it our duty to report such violations? Hitherto we have been too timid to report. It is not a personal matter, gentlemen, but we owe it to our profession to aid in every way possible in the suppression of that which will drag us into the mire. The highest court of England quite recently held that a man who joins an honorable and registered society must strictly observe the rules of that society under penalty of forfeiture of his membership and sustained the action of the General Council of Medical Education and Registration in removing the name of a prominent dentist from their membership because of his having advertised his business contrary to the rules of that body. The decisions of that court are a precedent for the courts of other countries. Is not the action of that council a worthy precedent for our association?

Should not the undignified practice of many reputable men of placing on their envelopes their business cards be condemned? Do they not labor under the mistaken idea that it advertises them or their business? We are professional men, not tradesmen, furthermore, I find upon investigation that in the rarest instances does a letter pass through more than four or five hands in reaching its destination and only when it fails to reach its destination is the business card referred to by the busy postman. To be sure there is nothing wrong or unprofessional in having our name and address

on our envelope for the safe return of our mail, but is it not shocking to receive a letter from one of our professional brothers, the envelope of which is adorned with a cut of his wonderful invention? Strange as it may seem, I have received such from members of this association. In a few instances I have received them with a cut of the writer on both letter head and envelope, but they, I believe, were not from any of our members.

To my mind the propriety of having price lists is questionable. There is certainly no reason why a patient may not know the cost of each operation, but the list, varying as it does from \$5 to \$50, practically amounts to no list. To be sure we have our rates, but you each know that in like operations the fees are rarely the same. It seems to me that it would be difficult to explain the difference satisfactorily to the patient. After all, is the list necessary? We are not in the mercantile business and do not need the advertisement. Do not our patients place themselves in our hands because they have confidence in our integrity and skill? During a practice of thirteen years I have only once been asked for a list, and during my investigation extending through a number of years I remember only one man who claimed to adhere to his list. He very frankly said that he did. If we have a list should we not adhere to it. If we do not, are we not practicing fraud and deception? Does it not look unprofessional? The "Cheap John" displays his list on his sign, the dentist of the "upper ten" on his appointment card. Is there any difference save in the fees?

In most, if not in all of our States, laws have been enacted restricting in some particulars the practice of dentistry and boards of dental examiners have been appointed. These laws were enacted for what was conceived to be the protection of the public and our profession as well. They may not, and do not, fully accomplish the desired result, but they are a step toward a higher standard of requirements for the dentist, and the boards in enforcing them should have the moral support of all dentists. The boards need the support, for, while it is almost beyond belief that any one would oppose that which even tends toward our elevation the board of Tennessee has met with opposition.

Our fathers in 1869 organized our association for advancement in the science and dignity of our profession. Then the spirit of professional interest was stronger than the animal of self-interest, and those loyal, high-minded men did not even dream that one of our

membership would ever be so debased as to be valued for personal aggrandizement. It has been said that the professions are made strong by what they include rather than exclude. Let us then include so much love for our grand profession, such high, pure aims in its practice, so much enthusiasm for its advancement, that there shall be no room for any unprofessional act or thought. Let us work to an ideal, and let that ideal be as high as finite conception can reach.

Much has already been said in regard to a home for the Southern Dental Association and a permanent committee on a "Dental Chautauqua" has been appointed. The idea, as I understand it, is to erect at some desirable summer resort a building in every way adapted to the needs of the association, and where year after year the meetings may be held. There is much that is desirable in this plan, but is it practicable? It means the outlay of a large sum of money without any return, a dead weight for the association to carry. Furthermore, men will not go to the same place year after year.

If the association will have a home, let it by all means be located in some central city and so constructed that a part can be rented, yielding sufficient revenue to pay all expenses. So located "The Home" will be an object of interest to all dentists passing through that city. Besides, there will always be a number of resident dentists to keep up the interest. My preference is not a southern but a national home and, as has been suggested, a national museum, located in Washington or some central city, where from all parts of the country we can send our treasures. Why not unite with the other societies and build a home that will be a credit to our profession and establish a museum that will fittingly preserve our history for this and future ages—in other words, a monument to the dental profession of America.

In 1890, at the meeting of our association in Atlanta, it was suggested that we be represented at the World's Fair in 1893. The American Association took up the suggestion and a committee of fifteen has been appointed by the two societies, which committee will meet during our present session. The work of organization is far advanced and the World's Columbian Dental Congress will be held Aug. 17 to 27, 1893, in Chicago, Ill. Let us not forget that it was our suggestion and that as such it behooves us to give the committee all the support they expect from us. Certainly they have a

right to expect our presence, and so far as possible we should attend this congress.

At our last meeting there was a resolution to the effect that the constitution be so changed as to provide for the election of officers at a much earlier hour, so that the newly-elected President might have the opportunity to make his appointments. This idea is excellent. I would suggest that a section on orthodontia be created. Properly, it does not come under the head of any existing section, but is separate and distinct.

It would be well, also, to thoroughly revise the constitution. There are some defects not necessary to allude to here, which a committee would readily detect, and of which all the ex-presidents are aware. The principal one is its vagueness in setting forth the duties of the officers and committees. I do not make this last suggestion to bring about a discussion of the constitution, for we wish to embody nothing new, but simply to make plain that which we already have.

I have called attention to these things, gentlemen, because of my deep interest in the continued advancement of our profession and the preservation of its dignity.

In the name of those who have shed luster upon that profession, let us be faithful to our sacred trust, transmitting to those who will succeed us an honorable record of duty faithfully performed.

Drs. Chisholm, Marshall and Lawrence were appointed a committee to consider the address.

A report of the Executive Committee as to what that committee is doing with regard to the Columbian Dental Congress, was then presented. All members were invited to attend the meeting of the American Dental Association at Niagara Falls next week and the Association adjourned until 3 o'clock.

The resolution offered last year, to make the election of officers the special order of the afternoon of the first day's session, was defeated and the election made the special order of this afternoon.

The following new members were then elected, who were permitted to assume the floor upon payment of dues: Drs. Thomas B. Hinman, Atlanta; W. J. Morrison, Nashville; N. A. Williams, Valdosta, Ga.; E. N. Wells, Savannah; C. H. McDowell, Griffin; F. A. Pope, Franklyn; F. C. West, Natchez, Miss.; S. W. Foster, Decatur, Ala.; E. F. Grant, Columbia; W. E. Watkins, Bay St. Louis, Miss.; U. D. Billmeyer, Chattanooga; R. D. Griffith, Hynes,

Texas; W. F. Arrington, Jr., Memphis; J. N. Jones, Jacksonville, Fla.

The courtesies of the floor were extended our visiting dental surgeons, and especially to the members of the Tennessee Association.

The committee to discuss the address of President White reported an indorsement of the address, except as to the advisability of inviting all dental organizations into the movement to build a permanent Chautauqua, and the paper was opened for discussion. A large number of finished addresses were made on the subject, and then Dr. B. Holly Smith presented the report of the Committee on Dental Education. The paper was an excellent production and elicited much discussion, during which the Association adjourned to meet at 8:30, when discussion was resumed.

AMERICAN DENTAL ASSOCIATION.

The thirty-second annual meeting of the American Dental Association was called to order by the President, Dr. W. W. Walker, of New York, at the Casino Opera House, Niagara Falls, N. Y., Tuesday morning, August 2d, at 11:15 o'clock.

The roll call revealed about eighty members present.

Various officers' and committee reports were read and adopted.

Dr. W. W. Walker read the annual address, wherein he referred to the forthcoming World's Columbian Dental Congress, and recommended that in view of the advanced standing and improvement in the colleges of the United States, the practice now existing of compelling a graduate to undergo an examination in each State in which he desires to practice, be abandoned. He further referred to the advisability of increasing the section work of the American Dental Association, by bringing the local societies into closer relationship with this the representative body of dentists.

The consideration of the address was referred to a committee. Adjourned.

TUESDAY EVENING SESSION.

Sec. VII., on Anatomy, Pathology and Surgery, made its annual report through the chairman, Dr. T. W. Brophy, of Chicago.

A statement was made of the important articles which appeared in the dental periodicals during the year. The first paper pre-

sented by the Section was by Dr. J. E. Cravens, of Indianapolis, Ind., on "Pyorrhœa Alveolaris." The essayist related a practical case of pyorrhœa alveolaris cured by the use of diluted sulphuric acid, followed by nitrate of silver.

The subject was discussed by Drs. Barrett, Rhein and Morgan (W. H.) Pyorrhœa alveolaris was declared to be a constitutional inherited malady, which eventually leads to loss of the teeth. Many cases are said to be absolutely incurable, except by the removal of the teeth. The discussion was continued by Dr. Harlan, who recommended the use of diluted sulphuric acid in preference to aromatic sulphuric acid. He believed the disease to be more of a local character than is generally admitted. Dr. Cravens closed the discussion.

Dr. M. H. Cryer, of Philadelphia, then described a "New Operation for the Resection of the Inferior Dental Nerve." The operation consists in cutting out the bone below the sigmoid notch until the opening of the inferior dental nerve is reached, the nerve is then drawn out as far as possible from the inferior dental canal and severed, it is then cut as far up as is possible toward the base of the brain. The subject was discussed by Dr. A. E. Hoadley, of Chicago. Dr. Morrison, of St. Louis, advocated the older method of making no external incisions, but operating entirely from within the mouth, by using the dental engine and drill, cutting out any portion of the nerve desired. Dr. Fillebrown cited a case in which the removal of almost the entire nerve resulted in no permanent relief. He also advocated operating from within the mouth, as did the next speaker, Dr. Brophy; the discussion was closed by the essayist.

Dr. A. H. Thompson, of Topeka, read a paper entitled "The Grinding Teeth of the Herbivorous Mammalia."

Adjourned.

WEDNESDAY MORNING SESSION.

Dr. W. C. Barrett, of Buffalo, N. Y., read a paper on "Comparative Dental Anatomy." The subject was discussed by Drs. Geo. E. Hunt, James Truman, A. H. Thompson, C. N. Peirce, and the discussion was closed by Dr. Barrett.

Dr. W. B. Ames, of Chicago, read the report of Sec. I. on Prosthetic Dentistry, Chemistry and Metallurgy. The report was discussed by Drs. F. W. Low, of Buffalo, and George Evans, of New

York; the latter then presented a new method of making crowns, which was discussed by Drs. A. H. Thompson of Topeka, J. D. Patterson of Kansas City, H. J. McKellops of St. Louis, S. H. Guilford, of Philadelphia, and the subject was passed.

Sec. II., on Dental Education, Literature and Nomenclature then presented the annual report through its chairman, Dr. Louis Ottogy. The report referred to the increase of dental colleges from thirty-three to thirty-eight, stated the number of dental graduates for 1892, to be 1483. It referred to the attempt made during the year to bring into closer relationship the various local societies with the American Dental Association. Mention was made of the establishment of reading courses on the Chautauqua plan, by the Post Graduate Dental Association of the United States. A criticism of the latest books on dental subjects published during the year, was also presented.

The subject was passed.

The sections were then organized.

WEDNESDAY EVENING SESSION.

Dr. L. D. Shepard, of Boston, read the report of the committee appointed to consider the President's address—and in accordance with the recommendations made by the President and endorsed by the committee, the association adopted resolutions embodying the following topics:

1. An appropriation of \$500 from the funds of the association to the treasury of the World's Columbian Dental Congress.
2. A standing committee of three on "State and local organization," to be appointed to serve for one, two and three years, respectively, and thereafter each new member to serve for three years. The object of this committee is to bring into closer relationship the local societies with the American Dental Association.
3. The meeting of 1893, is to be one of business, revising of the Constitution, By-Laws, etc., and is to be held immediately preceding the meeting of the World's Columbian Dental Congress at Chicago.

The resignation of Dr. Frank M. Odell, of New York, was read and accepted.

Sec. III., on Operative Dentistry then offered its report through Dr. A. W. McCandless, of Chicago. In the report there was presented a list of the most important articles pertaining to the work

of this section, which appeared in the periodical literature during the year. The important materials introduced were also described. The section reported several papers; the first read was by Dr. W. N. Morrison, of St. Louis, on "Transplantation," reporting the present favorable conditions of several cases transplanted so long ago as 1875.

Dr. Geo. E. Hunt, of Indianapolis, read a paper from the pen of Dr. J. E. Cravens, of Indianapolis, entitled, "Matrices." These subjects were discussed by Drs. Head, Morrison, Swasey, McKellops, Taft, Darby, Morgan, Ottofy, Allport, Watkins, and others.

Adjourned.

THURSDAY MORNING SESSION.

On call, Sec. IV., failing to respond, was passed and Sec. V., on *Materia Medica* and Therapeutics made its annual report through the Secretary of the Section, Dr. Geo. E. Hunt, of Indianapolis. Among the remedies and their effects described were pental, aristol and bichloride of mercury. According to the report the germicidal powers of the latter drug have been greatly overestimated.

Dr. A. W. Harlan, of Chicago, then read a paper on "Europhen and Trichlor Acetic Acid." The subject was discussed by Drs. Frank Abbott, John S. Marshall, F. Peabody, Geo. E. Hunt, F.W. Low, Thos. Fillebrown, C. N. Peirce, J. D. Patterson, J. Taft, James Truman, James McManus, J. Hall Moore, W. C. Barrett, J. Y. Crawford and closed by Dr. Harlan.

In course of the discussion, the various speakers referred to the use of iodoform, europhen, the germicidal powers of the bichloride of mercury, the nitrate of silver for the relief of sensitiveness around the necks of the teeth, and for the arrest of decay of children's teeth.

The subject was passed.

Sec. IV., on Histology and Microscopy, then made its annual report through its chairman, Dr. Frank Abbott, of New York.

Dr. C. W. Stainton, of Buffalo, N. Y., read a paper entitled "Crownless Teeth." He presented a case of defective calcification of the teeth of three children of one father; in all these cases the teeth are stunted, deformed and almost crownless, as a result of defective calcification, the teeth were worn off almost to the gum line. The subject was discussed by Dr. Frank Abbott, who

also cited a similar case; Drs. C. N. Peirce, W. H. Morgan, A. O. Hunt, C. C. Carroll, W. C. Barrett, W. N. Morrison, John J. R. Patrick, Joseph Head, S. H. Guilford and closed by Dr. Stainton.

According to the report of the Committee on Credentials, 25 societies and seven colleges were represented by delegates.

Adjourned.

THURSDAY EVENING SESSION.

Sec. VI., on Physiology and Etiology made its report through the chairman, Dr. H. A. Smith. Dr. J. D. Patterson then read a paper entitled, "Diseases of the Tissues of the Oral Cavity caused by Medicaments," which was discussed by Drs. Fillebrown, Morgan, Hunt (G. E.), Smith (H. A.), Barrett and others.

Dr. John J. R. Patrick of Belleville, Ill., then read his annual report on the "Condition of Prehistoric Crania" as far as the work at the present time can be reported upon. The report was discussed by Drs. C. N. Peirce, H. A. Smith and Louis Ottofy.

The subject was passed.

The Committee on State and Local Organizations presented a partial report. They intend to send out the following ten questions pertaining to dentistry, to all local dental societies, and to secure condensed reports of the meetings of local societies:

No. 1. Should Examining Boards have power to grant certificates of qualification to undergraduates?

No. 2. Should immediate root fillings be practiced while purulent conditions exist at the apex?

No. 3. What are the best materials to enter into the composition of temporary fillings to be retained for a minimum of three years?

No. 4. What are the best methods for obtunding sensibility of the dentine by either local or general means, should arsenic ever be used?

No. 5. What are the best forms of partial lower dentures and the methods for constructing the same?

No. 6. Corrective dentistry. Its present status. What are the simplest and most universally applicable forms of apparatus and most efficient retaining fixtures?

No. 7. To what extent and under what conditions is the collar crown a cause of pericemental inflammation?

No. 8. In cases of congested pulp should the arsenical application be made without preliminary treatment?

No. 9. What are the advantages and disadvantages of the use of the matrix. 1. With gold. 2. With plastics?

No. 10. The etiology of pus formation?

FRIDAY MORNING SESSION.

Dr. John B. Rich, of Washington, D. C., then made the report of the committee appointed in regard to the attempt of the census bureau to classify dentists as manufacturers. The report of the committee gave a history of the subject and related the manner in which the objectionable feature was overcome.

Dr. L. D. Shepard then offered some resolutions in regard to the same matter, the principal object of which was that the Superintendent of the Census should be requested to return all reports that he has received from dentists, and that dentists should demand the return of the statements which they have made.*

Dr. J. Taft then read the report of the Committee on Necrology reporting on the death of Dr. John Allen.

The next meeting of the association will be held at Chicago the second Tuesday in August, 1892.

The election of officers resulted as follows:

President, J. D. Patterson, Kansas City, Mo.; First Vice President, J. Y. Crawford, Nashville, Tenn.; Second Vice President, S. C. G. Watkins, Montclair, N. J.; Corresponding Secretary, F. A. Levy, Orange, N. J.; Recording Secretary, Geo. H. Cushing, Chicago, Ill.; Treasurer, A. H. Fuller, St. Louis, Mo.

Executive Committee for three years, Drs. W. W. Walker, of New York, S. G. Perry, of New York, and D. N. McQuillen, of Philadelphia.

The newly elected officers were then installed. Drs. Patterson

[*All dentists who have made any statements to the census enumerators in 1890 should at once write to the Superintendent of Census and *demand* the return of what statements they have made. The Superintendent of Census has signed an agreement with representatives of the dental profession, according to the terms of which no reports as to the business of dentists will be gathered hereafter by the bureau, thus partially acknowledging the injustice or want of necessity to collect statistics from professional men. Write at once for the statements you have made.—ED.]

and Crawford accepting the offices to which they were elected, in brief well chosen words.

The President appointed Drs. A. W. Harlan and E. T. Darby as members of the publication committee.

The Association then adjourned to meet in Chicago, on the second Tuesday in August, 1893.

CHICAGO DENTAL SOCIETY.

MEETING OF MAY 3D, 1892.—UNIVERSITY EXTENSION.

ADDRESS BY MR. CHARLES N. ZEUBLIN.

Mr. President, Ladies and Gentlemen:—I am very glad indeed to present this subject, even in a brief way, to you, chiefly because this is a scientific body. I have come so thoroughly to believe in University Extension as to think that it is no longer a merely popular movement and hence superficial, but that it can be thoroughly scientific and that it is adapted to the study of scientific subjects by scientific people. I think the history of the University Extension movement is of sufficient significance for me to call your attention to a few salient points of it, because it is thoroughly in harmony with the development idea of the age. The evolution of teaching naturally results, if not in University Extension, in a similar means of instruction.

You are familiar with the fact that about the middle of this century the first step was taken toward giving greater advantages to the people from the universities. This was done by the universities of England, or rather, by certain progressive members of them deciding that it was no longer right to restrict the university advantages to the members of the Church of England. Having once broken down that barrier, the next to be destroyed was a geographical one, and leading educators thought that university advantages ought to be taken from the small university center and given to people in their homes, because the great majority of the people, whatever their thirst for study, could not go to the university. A great many means were discussed and projected and some were applied, but this University Extension system originated if in one place—most of these great movements originate in several places at once—if in one place at all, it was at Cambridge in the mind of Prof. Stuart, who was invited by a group of ladies to talk

to them on pedagogics. He said that he could not lecture on the theory of teaching, he could not give one lecture, least of all half a dozen or a dozen, but he would be very glad to illustrate to them the methods of teaching by giving them a course of twelve lectures on history. In order to bring more clearly before their minds the idea which he had, he presented a printed analysis of his lectures which the students had before them in the class. This he termed the Syllabus, and that is now the technical term by which the outline is called, which is always put in the hands of University Extension students. University Extension is not complete without it.

From this beginning has resulted now a movement which in England reaches at least five hundred localities, and in this country is constantly growing. The central idea of the system is thorough systematic instruction on the part of a specialist in his particular branch, a man associated with the university. In England the affiliation with the university is not so close as here, because the demands have become so great that it has necessitated a staff of lecturers not intimately connected with a university. In America up to the present time, and I trust it will always continue so, the men are actual university professors or instructors and have come from university life and enthusiasm, fresh from their study rooms and their classes, and bring their results to the people in the systematic way in which alone such ideas can be impressed upon those who are not giving up their time to study.

A great feature of University Extension is the fact that one does not have to give himself up wholly to it except for a brief time, but in that brief time it does demand concentrated attention. The lecturer speaks to the people for an hour or an hour and a quarter, and the results of that are dependent largely on his hearer's attention. If they fail to remember every word of the lecture, at least with the help of this syllabus which they have in their hands, at some future time they may recall what he has said. After this lecture they have a quiz of an hour, in which an opportunity is given for the lecturer to become acquainted with this new class of students, and to have them come into personal contact with him and to gain more of what he has to give, to learn by questioning him, perhaps, much of what he has in reserve. If any of those who are in the class desire afterward to pursue the study they have the opportunity of sending to him weekly or fortnightly

papers upon questions which he suggests, and at the end of the course they may take an examination. Now there is in this every advantage of university work and the additional advantage which I think we are coming more and more to see, that we can carry it along with our other affairs of life. We have the means and the stimulus of life held before us all the time in our business, in our professions, even in retired life, and this may be coupled with the scholarly acquaintance that is formed by these studies, making that ideal life which the students in the universities do not realize, which our professional and our business men do not realize, because both of these classes are in the habit of divorcing these important things, the true intellectual and the true social development.

I think it is a matter of interest to you that this last year, of the lectures given by the University of Oxford, which amounted in all to nearly five hundred courses at various places throughout England and Wales, 219 were purely scientific. Now we know from the history of the University Extension movement that it is usual to start centers with courses on literary or historical subjects. They appeal to the largest class of people, and it is with some centers a matter of time to work up interest in a scientific theme. But the fact is coming to be seen that there is this demand for the sciences and when they attempt to satisfy this demand they get on the whole better work out of the students than they do in the literary, historical and economic fields. These lectures by the University of Oxford as well as those given by the universities of this country embrace the whole field of the scientist, and although they cannot be expected to give such thorough laboratory or microscopical work as is done in the colleges, at the same time advantages are given to earnest students who can remain with the classes and do just as exact work for this brief time as is done by the scholar in his laboratory or in his study. It is coming to be recognized that the sciences can be taught to those who have but little time, and that is the important feature for us Americans, for us Chicagoans to consider. It is true that we are rushed, that we are in great haste in our life, that we do not take time to rest. Yet if we are going to continue to labor in a state which demands competition we must yield to the competition, and this competition drives us on so that the only way we can get an opportunity for intellectual development is by

saving an hour now and then. That saving can be affected by making an engagement with the lecturer, writing down one's engagement and keeping it weekly or fortnightly, and using one's spare moments for preparation. I do not hesitate to recommend even to men in professional life, even to dentists, and I recognize the standing that American dentists have among scientists and the world, I do not hesitate to recommend to such a body of men the kind of studies that are pursued now by workingmen, by wealthy people, by every one, because this movement can be adapted to those who can pursue the study, and it can be made just as scientific as the equipment of the listeners demand. The subjects that are treated are such as you and such as other men in like professions demand, they are subjects which on the whole, without having time to personally investigate, that is, thoroughly investigate, these men must necessarily have a superficial knowledge of or neglect their profession. Here is the advantage of bringing to you a specialist with his patiently acquired results, an authority on his subject and who has done the work which the pressure of other work prevents your doing. I believe thoroughly that if bodies like this, scientific societies, organizations of professional men, would interest themselves in this movement, interest themselves by doing thorough work in an extension course, it would not only be of inestimable advantage to them, but it would raise the standard of University Extension and that is just as important with us as raising the standard of our colleges. We are in danger of making all such movements too popular; let us make them scientific by giving to them the support of scientific men.

DISCUSSION ON A PAPER ENTITLED "TOBACCO AND ITS EFFECTS,"
READ BY DR. L. L. DAVIS BEFORE THE CHICAGO
DENTAL SOCIETY.

DR. E. D. SWAIN: I desire to congratulate the essayist on giving us so good a paper upon this subject. I went to the books for ideas with which to open the discussion, but I found them very meager indeed; there was very little said about it, and most of that was that years ago it was considered to possess great medicinal virtues, but of late years the use of tobacco as a medicine had been largely discarded. I believe its curative virtue, if it has a good

property, is that it is a sedative. The long continued use of tobacco is unquestionably, however, a nervous irritant and any person who has used it for many years, either as a chewer or smoker, will, I think, concur in the statement that it becomes an irritant rather than a sedative. I question very much the statement that the excessive use of tobacco will help one mentally or physically. We have all observed in those people who have used tobacco for a number of years the conditions explained by the essayist, namely, the receding of the gums and the softening of the tooth about its neck. I can speak on this subject somewhat from experience; I used tobacco myself from childhood up to a little more than a year ago. I have chewed and I have smoked, and I am satisfied that my teeth were injured from the use of tobacco, not only in chewing from the grit which it contained causing mechanical abrasion, but in that peculiar condition which it produces of congesting the mucous surfaces which results in a disorder of the subcutaneous glands causing them to give off a diseased secretion which destroys the tooth. I don't know that I have ever observed any bad effects of nicotin or the product of combustion of smoking, on the enamel of the teeth other than to stain it; tobacco colors the teeth yellow, but the other conditions I have not noted during my experience as a practitioner of dentistry. The worst results from the use of tobacco come from the smoking of cigarettes. The combustion of the paper, especially the cheaper qualities of paper, I consider very deleterious. Just what the products are I cannot say, but the condition of the mucous membrane of the mouths in those people who are confirmed cigarette smokers gives us all the evidence that is necessary that it is very injurious.

DR. T. L. GILMER: My experience leads me to the belief that tobacco tends to prevent decay of the teeth. I recall a number of instances where patients have left off for a time the use of tobacco, and in these cases almost invariably has there been a marked increase in the tendency to decay. So frequently have I observed this that I cannot but conclude that tobacco must have a preservative effect. If this condition were only found in the mouth of former chewers we might question whether the increase in decay did arise from the lack of friction offered by the chewing process rather than by virtue contained in tobacco, but I have seen similar results following the discontinuance of smoking but not so marked.

DR. A. W. HARLAN: I do not rise for the purpose of defending the use of tobacco, but the thing I would like to know is which are you going to do, chew gum or chew tobacco? What is there about tobacco that will cause deterioration of the teeth? Tobacco is a vegetable, cabbage is a vegetable. Cabbage is an article of diet, but it is capable of being so treated that there will be so much lactic acid as to injure the teeth. Tobacco is never treated in that way, so that you do not get the ill effects of it in chewing or smoking. Opium is a vegetable, a so-called medicinal plant, it has a great many derivatives, many of which are used in medicine as sedatives, etc. Tobacco *per se* does not injure the teeth any more than corn husks or bean shells; not half as much as beans, for the simple reason that it does not contain the constituents that microorganisms can live upon. It is the misuse and abuse of tobacco that makes it one of the objects to which civilization is directing its eyes. The experiments which have been made with reference to smoking tobacco are successful as to its properties in that respect; but does tobacco smoke affect the teeth? If it does, it does it beneficially, that is, it will destroy the microorganisms on which the proliferation of dental caries depends; but tobacco used in chewing is used in a bad way.

One of the reasons why people suffer from stomatitis and things of that sort is because they do not use anything that will act as a laxative, and tobacco to a great many people is a laxative, and in so far as it is a laxative it is beneficial to health. Nine-tenths of the bad smells which you encounter are not due to the supposed gases at all, but to the inaction of the alimentary canal. If you do not bathe, or if you do not drink enough water the contents of the alimentary canal are not discharged and consequently people suffer from bad breath. They perspire from the whole glandular system; and are disagreeable to every one who comes in contact with them. Those people I recommend to take a smoke. You know what tobacco is, but the other odors come from unknown and unseen sources that you do not know anything about.

With reference to the effects of tobacco on the teeth; there is a circle all around the necks of the teeth above the termination of the enamel that is due to filth, that is due to the continual bathing of the mouth with the fluids, the juices that are extracted from tobacco by chewers. I have known any number of men who have chewed tobacco moderately and who are sixty-five and seventy

years of age and their teeth are all sound, and I have known others whose teeth have decayed rapidly, but they would have decayed anyway.

With reference to the wearing down and mechanical abrasion, I had in my office to-day a gentleman who has eight teeth in his upper jaw and nine in his lower and he never chewed tobacco in his life, and all of these teeth have worn down until they are nearly to the gum. So that it is not an uncommon thing for the teeth to be worn down by persons who are not tobacco chewers. I don't defend the habit: I never smoked until I was twenty-five years of age and I didn't do it then from choice, but I do now and tobacco is a great satisfaction to me every summer, and it is to any man who may be walking in the woods, traveling in a boat, or be in a solitary condition. I apprehend that it is more used by people who are in the habit of thinking by themselves and who want to be undisturbed, and they use it for its sedative properties, probably, in the same way as some other people use articles of food. There is no doubt but what there are many people who eat too much pie every day, and pie is very much worse than tobacco if you eat three pieces a day, and if you eat ice cream every time you get a chance it is a very bad thing for the coats of your stomach. If you go to discussing tobacco on its merits I will put it against any vegetable or animal tissue that is used for the purpose of nutrition, because it prevents waste. A man can take a chew of tobacco, or smoke a pipe or a cigar and he can endure more, he can walk farther and go longer without water to drink than the man who simply eats the same quantity by weight of oats or wheat or corn or rice or animal tissue. So I say it prevents tissue waste, and that is the reason why the whole civilized world has taken up its use. I do not discuss the question of the use of tobacco simply on account of its preservative or its nonpreservative qualities on the teeth, because it is inert, it does not affect the teeth at all. There is nothing in tobacco deleterious to the teeth and microorganisms will not pry into tobacco juice. I simply state that as a proposition which any scientific man here can disprove if he has the necessary proof. Tobacco juice will not ferment when it is mixed with saliva and if you don't have a fermentable substance you don't have anything that putresces, and so you have to leave that out of the question. There is no doubt that tobacco will stain the teeth after the enamel has been worn off; there is no doubt that it will, on account

of this agency around the necks of the teeth, tend to promote an aggregation of foreign particles and large deposits of salivary calculus, a form of which is the *lipidodes localis*, and that is one of the most annoying organisms that live in the mouth. One of the greatest scientific men in dental surgery advances the theory that caries are caused by *lepidodes localis*. It is claimed innocent microorganisms never produced caries in the world, but on account of their location on the teeth and growing on what they are fed, that is the decomposition of the saliva in consequence of the coming in contact with it of ammoniacal products and the liberation of the elements by which they grow; and if dirt and grease, and things like that collect around it perhaps there might be a cavity. I don't advise any person to begin the use of tobacco, to chew or smoke it, I simply say from the standpoint of science that tobacco as tobacco is not injurious to the teeth at all.

DR. GARRETT NEWKIRK: Having used the weed at one time myself, I think I can look at the tobacco question fairly. I believe that some of the accusations presented against it to-night are true, that on the whole it usually does exert an injurious influence, especially upon the nervous system; that it very frequently has a bad effect on the action of the heart, and that physicians frequently meet with cases where they would be very glad if they could prohibit its use. Frequently they try to have their patients use it more moderately if they cannot get them to give it up altogether. Before the discovery of America civilized man did not know anything about tobacco. We might suppose, from the eloquent plea which we have heard from Dr. Harlan, that tobacco is probably the greatest civilizer which this world possesses. See how man has advanced during the last century since the introduction of tobacco into Europe! The only fault in that theory is that the poor Indian, who has used it a great deal longer, does not seem to have advanced at all. It has had one effect upon him and another upon us. There are a great many habits in the world that are hard to account for on any reasonable grounds. I think most people form certain habits because others do, just because it is the fashion. There isn't anybody who can give a sensible reason why the ladies should be trailing their skirts along our streets at the present time. There is no reason why they should and there is every reason why they shouldn't. I saw one of the most prominent reformers in my office yesterday. "Well," I said, "fashion

has you by the skirts." She said she had to fall in with the fashion, she couldn't be singular; so I suppose that is why a great many people chew tobacco and drink, and why they do a great many things, just because other people do. There is no philosophical reason for it.

I have not in my experience seen the same things which Dr. Davis advanced with regard to pyorrhœa. I do not remember that I have ever seen a case where I had reason to suppose the disease was produced by the use of tobacco. I have seen some of the worst cases in the mouths of those who have not used it, and I should not consider it essential in the treatment of a case to insist upon the patient leaving off. However, in chewing, masses of the weed are sometimes forced into the interspaces of the teeth, crowding the gums at the gingival margins. This acts as a mechanical local irritant and I believe has more ill effect than anything in the chemical action of the tobacco.

DR. LOUIS OTTOFY: I expected that the essayist might be able to state the reason why tobacco affects the teeth favorably. I did not think there are any who claim that there is not some peculiar effect from tobacco upon the teeth. I do not think there are any dentists who claim that that effect is not beneficial; at least I have never heard any one say that tobacco smoke is injurious to the teeth. We attempt to explain the cause as though it was exerted on the exterior of the tooth, but it has been for some years my opinion that tobacco smoke affects the teeth favorably through the internal circulating medium, the nicotin in the circulation in all probability exerts its influence *within* the tooth. I have always noticed that a dead tooth in a tobacco consumer's mouth is much softer and more chalky than a dead tooth in the mouth of any one else. No man can smoke and not inhale some of the smoke; in this way he gets the nicotin into the circulation very rapidly; it goes at once into the blood, being transmitted in the lungs, is circulated and brought into the tissues and the teeth, and it is there that I believe it exerts its influence. I believe that in chewing the beneficial effects are counteracted by the unfavorable effects on the soft tissues of the mouth; however even this habit is a benefit to the teeth by means of the nicotin being introduced into the teeth; it is injurious to the teeth, because chewing tobacco does contain impurities, especially molasses, sugar or grit, which will affect the gums and teeth. A habit, the tobacco chewer forms, is to

place the tobacco on one or the other side of the mouth and on the outside of the teeth and let it rest there, which eventually results in the destruction of the gum tissue, thus overbalancing the benefit he derives from the tobacco. I would like to see the essayist continue to investigate, and determine if possible, where the beneficial effect of tobacco smoke in the mouth comes from, whether it is the effect of the tobacco upon the enamel or whether it is the effect of the tobacco in the circulation through the pulp upon the dentine.

It seems to me that whatever beneficial effect the use of tobacco has in preventing caries of the teeth is probably due to its antiseptic properties. Smoking or chewing is one of the commonest ways in which some antiseptic influence is exerted within the mouth with sufficient regularity and duration to accomplish any appreciable result, and it does not seem necessary to go any further than that to account for the ordinary beneficial results from the use of tobacco in respect to the preservation of the teeth.

DR. C. F. HARTT: I don't think we are looking at this subject in the right light; if tobacco preserves the teeth it does it in a very unsatisfactory manner, and we as dentists owe it to ourselves and to our brothers, to discourage the use of tobacco, because it not only destroys the beautiful appearance of the teeth, but causes a man to become careless, taking less pride in them. In addition, the man who sells the tobacco gets the money that the dentist ought to have.

In a word, let the tobacco fiend worship at the altar of his family dentist, and arm himself with a good tooth-brush, and he will then have very little excuse for continuing in a habit which is not only expensive, but very annoying to the majority of refined and cleanly people.

DR. TRUMAN W. BROPHY: A number of years ago when the question of the preservation of the teeth by the influence of tobacco was under consideration, I had a discussion with a friend of mine who told me he had been making some experiments with a view to ascertaining whether tobacco really does preserve teeth or not; he believed that tobacco was an antiseptic and would preserve the teeth, he believed that smokers' teeth were better than the teeth of those who did not smoke, and that the teeth of chewers were better than those of people who did not chew, and he was surprised at the result of his experiments. He told me that he placed some extracted

teeth in a solution of tobacco and in the course of six or eight weeks they began to disintegrate, the action of the tobacco upon them was similar to that brought about by the influence of acids. The gentleman who made these experiments was Prof. Haines of Rush Medical College. I wish Dr. Davis, if he intends to pursue this matter further, would see Dr. Haines and learn his conclusions and get the benefit of his experiments upon the teeth with tobacco. I mention his name because he is recognized everywhere as an expert upon the subject of chemistry and the results of his experiments would have a great deal of weight in settling the question. I would say that the tobacco he used was bought at the stores where tobacco is sold to men who chew and smoke; I don't know that there is any such thing as pure tobacco. The experiments Sir Humphrey Davy conducted for over four years with a view to procuring pure water, did not succeed. There is nothing absolutely pure, all substances are more or less adulterated.

DR. L. L. DAVIS, in closing the discussion, said: As stated in the beginning of my paper, when I first took up this subject, I hoped to find good argument in favor of tobacco, so I read, or looked over some twenty or thirty different authors, and laid just two aside who spoke favorably of the use of tobacco, and I have quoted from those two on this subject. Nothing would please me better, from the standpoint of a smoker, than to have some good authority for a favorable judgment in this matter and I would have liked to have heard more in its favor by those who discussed the subject this evening, but only one person has spoken to any extent in its favor, and I for one should have been pleased if he had talked longer, as I wish to obtain all the favorable argument I can on this subject.

There is no particular point I can touch upon; there have been a few things said which I might criticise or emphasize, but I think on the whole the matter has had a thorough exposition.

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THE MARCH OF PROGRESS.

One who does not visit the various societies engaged in diffusion of knowledge can scarcely comprehend the rapid strides made in the various departments of dental practice. The journals give very good reports of the meetings and congresses, but they fail to do more than report discussions and publish papers read at the meetings. The modest dentist who is of an inventive turn of mind, goes about talking to his fellows, and quietly pulls out from his pocket, or elsewhere, a new labor saver, or an instrument which will make it easier for dentists' daily work.

These quiet and unassuming gentlemen never patent their inventions; they give them freely to their brethren as a slight recompense for the gratuitous labors of the vast throng who have contributed so freely of their time and talent to make this the most progressive and enlightened profession of rapid growth the nineteenth century has seen. But for the self-sacrificing work, of the many who have done their utmost to keep alive societies, journals, schools of dentistry and a permanent literature, we would not to-day hold the position we occupy before the laity.

It should be our endeavor to encourage freely to our whole number and sustain all high-minded, generous givers of new inventions and discoveries. A word of commendation and praise will often make of a wavering man one of the most substantial and respected citizens, and it is our duty to encourage and fight for those of our rank and file who are our benefactors.

Let the work of discovery and true progress go on, while we assimilate and reciprocate, if not in those channels, in others that are equally as important, if they do not involve the intense mental energy of our best workers.

THE DENTAL CONGRESS.

The executive committee of the World's Columbian Dental Congress met at Lookout Mountain, Tennessee, Monday, July 25, 1892. All the members of the committee except two were present. Several of the standing committees were filled and quite a number of additions were made to those not already filled. An honorary bureau was created for the following countries: Great Britain, France, Germany, Belgium, Holland, Denmark, Scandinavia, Italy, Austro-Hungary, Russia, Spain, Portugal, Greece, Asia, Africa, Switzerland, Canada, Mexico, Central America, South America (two), Australia and the British Colonies, and a bureau for American dentists practicing in foreign countries. Membership was defined for Americans in accordance with the paragraph on page 33 of the revised circular issued some months since and quite generally republished: "The membership shall consist of legally qualified and reputable dentists, as defined in the code of ethics of the American and Southern Dental Associations, residing in the United States." This rule will apply to all American dentists practicing in foreign countries. The foreign membership will be passed upon by the honorary committees consisting of three persons selected for this purpose by the executive committee. Two women dentists will be invited to read papers. The selection of the honorary officers will take place between the publication of this note and the 24th of October next. The general committee will meet at that time in Cincinnati, Ohio, and select all the officers of the congress not yet appointed. The utmost harmony prevailed and the work of the various subcommittees was reported to be highly satisfactory. The duties of all the committees, so far provided for, were clearly outlined, so that nothing remains to be done but for the committees to get to work and do their whole duty in the endeavor to make this the most noteworthy congress that will assemble in Chicago in 1893. The detail work, the work of the finance committee and all the necessary preliminaries were provided for at the last meeting. The Southern Dental Association adjourned to meet in Chicago, as well

as the American Dental association, so that all eyes will be directed towards Chicago in 1893, and all footsteps will be turned in that direction by the dentists of the world at the beginning of August next year. Chicago will be well prepared to receive every one who comes with the label of approval from some one of the various committees having the power to issue cards of eligibility or invitation.

SPECIALTIES.

One of the noticeable features of recent days in even the dental profession, is the tendency to divide and subdivide the work of the dentist. The first attempt generally is to separate that which is objectionable to the general practitioner on account of the annoying interference with general operating, thus it was that the prosthetic part of the dentist's duties were delegated to an assistant or some one who devoted his whole time to that branch. The practice of surgery was found to be absolutely impracticable to the general practitioner, the giving of anæsthetics, etc., much interfering with other patients. Finally, extracting and regulating is relegated to the specialist. In many respects this is a great advantage to all concerned. The dentist is enabled to rid himself of much that is annoying and which saps his energies without much accomplishment, the patient gets the benefit of superior skill, saves time and is served more promptly. The specialist is happy because he can give his sole attention to something he loves and he generally makes money. In view of all these considerations, welcome be the thorough, upright, honest specialist.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

To the Editor of THE DENTAL REVIEW :

DEAR SIR.—New York goes earlier and stays later as the years go by, and when the people go the dentist goes also, nothing to do if he stays. Truly we are creatures of circumstances. Who will say that brother Parkhurst didn't stir up a hornet's nest? Lo and behold! the *New York Herald* of the 7th of July, announces in big headlines, thirty thousand Christians have arrived in New York during the last twenty-four hours (to endeavor to straighten out

things.) One thing is sure, if we do not have less theory and more practice we'll all go, where?—to degeneracy—according to Dr. Talbot. He says, "We are beginning on the jaw." This may be so, but we shall want a good deal more jaw before we get the great problems settled that come into the explanations, how and where civilization is going to send us. The human race starts out as suckers, and are we going to conclude by Dr. Talbot's reasoning that we will ultimately be suckers again. Once a man, twice a child. Will the coming man be edentulous. We saw an editorial lately in the *Herald*, "Will the coming woman be a man?" Dr. Talbot, we feel like jumping upon you for your weak theorizing over "Riggs' Disease." Dan Bryant once said he wondered about the egg that struck him in the face when thrown at a party, and whether the hen was well that laid the egg? We don't fear of our egg being addled, for it is our egg, we have set on it out of respect to old Dr. Riggs, and we do not propose to leave it unguarded until we secure a nice brood of chickens.

Here is a bright question which we wish Dr. Talbot would answer. How about the extraction of the deciduous teeth as it stands in vogue to-day? Does it apply in practice the same as you advocate for the permanent teeth? You know the ideas in vogue by would-be prominent men regarding the removal of the first teeth. We have some new thoughts in line with the Doctor's views on nonextraction in connection with orthodontia. Further on we will give them. Dr. Bogue says that they have never been discussed by the profession (although he has thought of them). While we seem to criticise Dr. Talbot, we say pleasantly we think it a commendable article and worthy of earnest reading by earnest men. Such articles as these coming along monthly, ought to make all thinking men scratch up their ideas, for all things are not settled yet.

How little we do know. Yet how some rub their ponderous bread baskets, swell up so big and look so wise. In view of all that is so vastly interesting to be known, it is grand to be living. Only little by little does our true living reveal itself day by day, regenerating a life that helps to discern the knowable. Inspiration from above gives understanding. To every one this is manifested if they will take notice.

However, we may differ with regard to these far-reaching questions, viewed from a larger point of value, they will in the end re-

ward us all richly if we will be patient, even though we may sometimes suspect things are a little premature. No one should be unwilling to cross swords in friendly discussion whenever opportunity offers.

The *case* as a leader, in the July DENTAL REVIEW is a *case* that has been generally thought to be a hard one; but my! how simple it is shown to be there! And we are happy to add, that *Dr. Case* has the glory.

We could run and read such articles.

Editor Harlan's remarks in his report on books before the Illinois State Dental Society pleases us fully, because we think much as he does and have advocated the same thoughts in our letters, publicly and privately. We do fully believe that a quarterly with paid articles would honor us as a profession, and bring the ducats to the publishers.

Secondly, is our pet plan—a *weekly*. Let us tell a bit of privacy, only two other men know about. A plan for a weekly has been talked (over a claret punch—a light one.) The prospectus was drawn up, etc., that is all now. (Brother Hungerford hold!) We hope sincerely that Chicago will get the five million. By the way, we see to-day while writing, it is going to be better, they get two and a half million as a *gift*. Thanks! Now, we don't hope that they will get the credit of starting this new weekly. Chicago got the World's Fair and the Columbian Dental Congress. While New York don't care a knickerbocker, yet it will never get over the loss unless she is humored in her kinder-weekly condition. This enterprise would stimulate her through her pride, and by the formation of Cruoin—or red blood, and brotherly love, would again continue. Wait! Give her a chance to redeem herself.

Bring forth the new. Dr. Osborne, of New York City, has shown us a new device for correcting the malposition of natural crowns of teeth, taking the ground for argument that all apices of roots of teeth are in their normal condition. His plan is, where he finds a depression of the cuspids, to spread these to their proper position and then by simple methods place the jumbled incisors easily into position. His device for direct continued pressure is by banding the teeth to be carried out, soldering a stop upon the bands for securing the opposing ends of his bar which has upon it a screw, over this is a spiral spring, and over all is a metal tube.

The pressure of the spring is regulated by the screw. It is

virtually a spiral spring jackscrew. We saw many models of corrected cases of much jumbled inferior cuspids and incisors. According to reliable testimony these operations can be made with absolute comfort to the patient and accomplished in an expeditious manner. [We saw his papers of acceptance by the patent office.] The doctor proposes only to make this patent secure to him the credit of invention and to furnish the apparatus, an inexpensive one, to the profession, securing whatever profit there might be, which he says he don't want large, for his financial reward. He thinks the apparatus will scarcely exceed the cost of \$5. He argues that this seems to be a truly professional method of introduction. He wishes only to do what is *right*, and he secures it in the *patent right*. As this idea of *right* is an open question with a large following in favor of the doctor's views, we cannot consider by any means that the doors are closed, although some organizations seem to think they are settling the question by voting the truth. Truth isn't secured that way. It was once, but this age don't accept it. He says he has met ardent attention to his invention by some of the society directors, but he (suspects) that they are not in accord with his securing a patent, as it is not in line with the thought of *medical gentlemen*. (The italicising is ours.) We told the Doctor we thought there would be no difficulty in securing the attention of his invention by the profession. This is what we referred to in connection with Orthodontia as being something *new* and we think in consonance with Dr. Talbot's views, namely: Dr. Osborne is tenacious for saving all the teeth. He claims that to remove a tooth that is out of place is the way to establish a permanent irregularity. His views also, regarding the apices of roots, claiming that these are in their normal position whatever direction the natural crowns may tend.

Dr. Osborne will be an interesting man to hear from. He is half lawyer, dentist, and an unusually skillful mechanic, cuts his finest burs with the greatest facility, producing as fine instruments as we ever saw. These are the practical men, and the more the profession can have the better, but a young man of thirty and outside of dental organizations. He is one of hundreds of just such who are outside, and Dr. Kirk, in his able editorial, says, they all ought to be in associations. Does he know why they are not? We hint there is a strong reason, and it would be a nice thing for some one to study and find out. More later.

Rumor says that there are *two* movements for a dental combine that are in conflict. Does Dr. Crouse know anything about this? This will please the regulars in trade. Some one has been writing letters, which often proves a very dangerous thing, they are so often misunderstood. Look out for a microbe of a new specie, a kind of spirillius micrococcus, anærobic, lives without air and is mighty, living in the dark. Its ways are various. Turn on the light.

It is said that this microbe is of a McKinley breed, under protection.

The discussions of the Chicago Dental Club in the July *Dental Cosmos* are profitable reading, quite above the average. Note Dr. Marshall's emergency provision on the operating table. It was a bright and humane hit. Brass screws and cigar boxes can be turned to good account. Saving these bodies of ours means something. They are for worthier purposes than use for sour mash vats and smoking chimneys.

What is man? Some say, "nothing but a dentist." Some day, sometime our filmy eyes will be opened. Men who are prepared for emergencies can only meet them. Men who are courting newspaper glory will never, never fill the bill in such emergencies. Only those who watch and wait.

How some dentists get attention from the public by advertising squarely and others (under cover), the latter claim it is unprofessional to do so.

In the first class we will not include what is termed the "gutter dentist," "biled rubber man," "steam dentist," "parlor dentist" and etc. This method of putting oneself before the public has been one that has racked the heads of many an ambitious practitioner and not necessarily thoughtful of anything that is really an infraction of the moral law. There is no disguising the real fact that the true animus against advertising has come from the cheap John style, which has been quackish. By this we mean, offering to practice certain methods, which bore on the face of them, base evidence of fraud and were calculated to deceive the public. It is a fact now, and was more so when P. T. Barnum announced that the public did seek "Humbugism." We all know that our field of operation admits of as much opportunity as any for such practices—by the unprincipled. The first decided public venture in advertising in dentistry that comes within our memory was

in the noted Gleason's Pictorial, which during the period of 1840 to '50, was very popular as a family paper. It was one of the most popular ventures, as the old New Englander said, "as a picter paper." In this journal was illustrated very largely and lavishly and yet interestingly, carrying with it a good deal of intelligence, the practice of dentistry—as it was understood in those days, principally mechanical. The proprietor of this advertisement was Dr. Hitchcock of Boston, a fine, aristocratic gentleman, genial, cultivated and a man of merit. These articles would interest many to-day as a matter of reference. Emphatically joined to the illustrative was the practical thought he had in mind, the securing of a large practice, which he did gain and with it financial success. In his advertisement, as plain as printer's ink could make it, he did bid for the public, offering terms favorable to the clergy and to any of limited means. The doctor strongly guarded his surroundings with everything that pleased the cultured and the curious eye of the public in his finely furnished apartments. The best evidence of success was his apparent success. This was before the dictation of arbitrary associations. Dr. Hitchcock was the father of Prof. Thos. Hitchcock in the initial school of dentistry in Harvard. We readily recall the senior Hitchcock's genial bearing, fine-looking face and as handsome a set of teeth as we see in any mouth. Yet he was caught by the destructive malady, "Riggs' Disease."

With a little detour we will intertwine with this letter a little history. In the August of 1864, the American Dental Association met in Boston. Standing on the State House steps during the session were a few dentists, and among them were the late Drs. Riggs and Hitchcock, a few others whom I do not recall. Dr. Riggs, by way of conversation, described certain conditions of disorder, which he had been long observing associated with the teeth. He turns to Dr. Hitchcock and says: "What do you do with such cases?" He replies, "I am not able to do anything with them, I do not try." "Further," he says, "I am loosing my own teeth, one by one, from the same disordered condition which you have described, and greatly to my consternation." Dr. Riggs, after taking a casual view of the doctor's teeth, which readily exhibited their condition, says, "Here's an excellent chance to practice what I preach, not so much in public as yet." This led to an invitation to visit Dr. Hitchcock's office at once and

a little nucleus of dentists followed on, saying in side talk, now for something new. Dr. Hitchcock tells Dr. Riggs to look over his case, anything he wished was at his command. The doctor says quaintly, with one of his inimical laughs, "I don't expect to find anything; I have a novel instrument of my own, although not with me. Show me your laboratory with a forge and I will produce a pair of instruments with which I treat this disorder. Within an hour the instruments were produced and the operation commenced. This was the first public clinic of what is now known popularly as the "Riggs' Treatment." While it was the cause of much interest to those who witnessed it, there was little response to those who repeated what they had seen. Well, this was an advertisement of another class. The next that was heard from this subject was at a meeting of the Connecticut Valley Dental Association. Notice what follows. A set of instruments were exhibited by a Boston dentist as (*original*), which were *fac similes* of those Dr. Riggs had manufactured and used at Dr. Hitchcock's office, (he leaving those instruments there.) This will be seen as another class of advertising. This event was the means of arousing an interest in the real virtues of the subject. It became the occasion of advertising Dr. Riggs and his treatment in a way that could have hardly been predicted. From that time Dr. Riggs' fame has increased, and I do not say anything marvelous when I say that his name will be remembered as long as any man that has yet been identified with the profession of dentistry.

In 1880 Dr. C. M. Richmond, coming from California, exhibited in New York City his novel crown invention; which was put into the dental depots in its manufactured parts, allowing each dentist—who had ability—to purchase and to apply to cases in demand. It consisted in a porcelain face, a screw and nut with gold backing, giving contour to the shape of the tooth, this being fastened to the root held in place by the nut cemented in the root. Dr. Richmond was en route for Europe but was met with so much encouragement to stop in New York and apply this crown personally to those who would wish the operation for their patients, the doctor manifesting such unusual ability in applying them expeditiously. This crown was found to be, further on, so expensive necessarily, was \$50, that the Doctor's fertile ingenuity sought an improvement, in order that it might become more within the means of the larger demand. The result was the crown now known as

the "Richmond crown," and later by a combination of this crown and "the all gold crown," "bridge work" was introduced on a decidedly different plan from the Low method, which was first exhibited in New York, at a meeting of the Odontological Society, by Dr. Low himself, and did not gather much enthusiasm from those who saw it. This was previous to the Richmond method. The Improved crown it was found could be given to the public at a reduced price, namely \$15, and the All Gold Crown, \$10. The sagacity of a business eye fell on this invention and the inventor was captured, a most natural occurrence as human nature goes. Into the *New York Herald and Times* went a big "Ad," costing the sum of one thousand dollars for a single insertion. This was placed over the entire side of the paper, headed with big letters, "*Artificial Teeth Without Plates*," followed by large illustrated cuts, showing very intelligently, at a glance, what it all meant. It was a bold and expensive experiment, but "nothing ventured, nothing gained." Suffice it to say, it was a great success from the first. We know it from the best authority, that the two days following these "ads." there was over five thousand dollars' worth of this special work booked for appointments. The office being centrally located, in a first-class neighborhood, and under first-class appointments, never anything like it in this country. From this the work commenced and increased to the demand of twenty-two operators inside the first year, callers numbering as high as one hundred daily, of all classes but largely of the bettered condition. Over a thousand dollars a day has been taken, and the check-book showed the receipt of a little over ninety-six thousand dollars the first year. The appointments at the door were in the highest order of livery, and the enterprise was an envy to the envious. Cabinet meetings by outsiders were frequently held in various cafés to consider what could be done to stay the rush and possibly the entire captivation of the dental practice in New York. We state this as a fact that ambitious men considered the propriety of starting other establishments. The excitement over this establishment was phenomenal. It was a tidal wave in dentistry. Fully one hour it was under consideration at one of the meetings of the Odontological Society what could be done, it was vigorously argued that the society should vote it out of existence and make their action public. Dr. Atkinson, although not a member, advised against any notice of the enterprise. He argued that it would not

help them out, but would call attention greatly to their trouble, advertising the establishment and therefore defeating their purpose. After all this expense of energy, Dr. Kingsley, always level-headed, suggested the propriety of dropping the whole subject, "for," says he, "it does not seem to have occurred to my friend who I so much dislike to differ with, that this whole matter is out of order, for the parties which it is the desire to deal with, are not members of this society." We recall a queer look that passed over some of the faces, light had dawned, and the subject was quietly dropped with a call for "Incidents of Office Practice," always of an interesting character.

This mammoth bonanza, by liberal advertising, came to grief before the end of its second year, for reasons which we could name, but deponent saith not. During the second year Dr. Richmond withdrew his association which cost him many tribulations and litigations of a vexatious nature, becoming "more sinned against than sinning," and leading to misunderstanding by the profession. It is doubtless no overstatement to say that his experience in the "crown and bridge work department" has been larger than any other practitioner, which entitles him to the favorable recognition secured by his recognized merit in the illustrated papers commencing in the July number of the *International Dental Journal*, to be continued throughout the coming year. These papers will illustrate only work that has proved its efficiency by practical test. Leading from fixed bridges (the distress of so many early in practice with this work) and greater distress oftentimes of patients, it has brought an evolution of movable bridges. The specimen of this later work, which was seen last year by so many dentists at the Union meeting of New Jersey and Pennsylvania dentists at Asbury Park, and also at the American Dental Association meeting at Saratoga, which received the most favorable comment, and was repeated by our illustrious Mac at the late Illinois State Dental Society meeting and reported in the June number of the DENTAL REVIEW. To show what has come out of all this booming of crown and bridge work, during its first advent, Dr. Patrick echoed also at the Illinois meeting the thought of all open-eyed practitioners "that it is the greatest advance of the Nineteenth Century and *has come to stay*." Truly it has been a child of many sorrows, because of its precocious childhood and luxurious surroundings. Out of all this and litigations that have come and are

doubtless yet to come will strengthen its value and make it a joy to many for ages. Think of the violent opposition at the beginning, and note the change now. "They all do it."—A good many cannot do it well.—It takes ability of high order to make it successful and useful. Is it not so in all that is useful? In all these various kinds of advertising from both points of view, it has done its work. We could continue this line of thought and show how advertising enters into all our dealings with each other. There is one way of putting advertising to a fruitful use, namely: by dealing in a spirit of fraternity toward each other. This includes a sincere respect of each other's opinions. Earnest and able writers cannot so palpably disagree as they seem to, that is, if they can consider long enough to understand each other. We would recall many bitter criminations and recriminations of able men among us, but they have later come to respect what each says and this makes it more profitable for those who listen. Better far better, "jump our bites" than to go so far and intimate falsity of statement. Authors that have proved their ability, as both these have to which we allude, cannot wisely charge the other thus. Let us think that this comes rather from a little cerebral friction than of the heart.

We have met Dr. Younger in town, and never so much younger as he appears now, full of good physical and mental enthusiasm. "Implantation" not in all his thoughts, but some of them. It is a scientific operation to the contrary notwithstanding, and one versatile writer has put himself on record as saying, "*it is not a scientific operation.*" Here's the Doctor's proof, he has the slides showing beyond contradiction to men capable of knowing a thing when they see it, and have the grace to say so. These slides show pericemental attachment. Where the pericemental membrane has *not* been removed previous to the operation. It is known by reading men that, according to some German authority, the claim has been put in that by removing this membrane, absorption which sometimes occurs is prevented. Dr. Younger is prepared to prove directly the opposite. Revivication is still a fixed fact in the Doctor's noddle. The Doctor tells of a new method of dealing with indurated cicatrical tissue induced by alveolar abscess. After dividing the tissue from its basal attachment he uses a tent of cotton and wax forced into the wound attached to the adjoining teeth, or tooth, by ligation, keeping it in place

until healing is secured. Previous to this, let me say, he dresses the wound with an ammonia *sulphite*, I think, to secure at the start an eschar covering of the wound. This he does in his socket formation for implantation. The Doctor is in New York to see his wife and three children go out for a European sojourn, and he is to meet them some months later. He proposes to be at the Italian Medical International Congress, meeting at Rome in 1893, and returning for the Chicago meeting. We might as well ask the question here, for many are asking it, is this congress to be a delegate body only of associated bodies, or is it a congress of dentists as dentists? It has been published *ad nauseum* that all reputable dentists are to take part. Many are whispering, what constitutes a reputable dentist? It is said that a list is being made up in our section that drops out not a few that have been foremost in all that has been progressive, and yet they are not now considered reputable, according to whom? rumor asks. According to those who are in command, rumor answers. Now we will say, without any danger of dispute, that Christopher Columbus never discovered a country for any such purpose as this. If this congress is not to be one in which all factions are to be buried, the sooner the whole affair is buried, and those who are in it, the better. We, personally, don't want to indulge in any such thought, and are not going to until we are compelled to do so. Let us have all the ablest men to the front, that have earned a professional reputation by putting their shoulders to the wheel of the slow car which has been so accelerated during the last thirty years. The American Dental Association, of which Dr. Allport was first Chairman, and Dr. Atkinson first President, was the beginning of this progressive movement, including, as the French say, the true spirit of *fraternite*. Coincident with this Dr. Atkinson, in a marked providential way, was led to New York City to commence his marvelous career that has been first and foremost in the incitement of this notable progress of ours. No one thing has been so potent for energizing the work of the A. D. A., as the energy that was infused into this body by that novel and fraternal association, the Brooklyn Dental Association (not Society), composed mostly of New York City dentists (a few, a very few, from Brooklyn), and ultimately many of the prominent active workers in the country became identified with this fruitful body. This nucleus of notably warm-hearted practitioners was a boomer to this

national body. At its second session, held in the city of brotherly love, a significant coincident also, we could never forget the enthusiasm which followed the reception of the first delegates of the B. D. A. at this meeting, marshaled as they were by the great heroic, self-sacrificing Atkinson. Many, many are gone on before us, but the work remains. With this movement commenced a new era in dental education, a new school and an advanced practice. Finding dentistry a business, as Dr. Atkinson often said, but leaving it at the end of his career a hope of its being a scientific practice, and a true history will not be secured at this great gathering of all nations if this fact is not brought out, emphasized and worthy recognition accorded to those who were its pioneers.

We congratulate Dr. Truman in the spiciness which is increasing from month to month in his editorials touching so emphatically and in many respects wisely, the thoughtful questions that are engaging thoughtful men. His views regarding honorary degrees may not be fully accepted, but in a general sense they are very largely truthful. It would be an unfortunate occurrence to many men if the method of procuring honorary degrees, that has been so much in vogue, were photographed. Dr. Barrett steps to the front in an animated reply more muscular than really intellectual. It is too warm weather to indulge in any attempt of the analysis of this question of degrees and non-degrees. While we have warmly advocated a just recognition to a large number of diligent workers in the earlier times, and who reflect much credit upon our profession to-day, giving them recognition from the schools with a degree, yet perhaps on second consideration in view of the discussion in the shape which it has taken, we are disposed to let the subject, the part we have advocated, take care of itself. All honor be accredited to such men as Dr. Andrews, of Cambridge, Massachusetts, and others who have lately had degrees worthily bestowed upon them. Certainly no man has more honorably won the degree of Master of Arts than Dr. Andrews. We publish here, for the benefit of Kansas City, who reported lately that "the *Eastern Dental News* was moving politically towards the Columbian Dental Congress." Dr. Andrews' name has been mentioned preëminently as a worthy possessor of the presidential chair at this great body of dentists, which is to be represented from all parts of a civilized world. His preëminence consists in his preëminence of ability, earned in such a modest, gentle-

manly way. He is a man who would impress any of the *belles-lettres* of dentistry of the old world in the most favorable manner. This nomination may be considered out of order, but as the walking committee are not in session, it is ventured, for it has been seconded all along the line. Dr. C. D. Cook and wife, Dr. Benson of New York, Dr. Woodward, President of the Odontological Society, have crossed the Atlantic. Dr. Cook, it will be remembered, is the venerable father-in-law of Charles Tomes of London, noted for his literary ability among dentists. *Au revoir*, as we go outing also.

Dr. Steinbourough, the inventor of the "Dies" mentioned in our last letter, should read Stonbourough.

Drs. Carr and Bödecker are summering at Carrville, Long Island.

All aboard for Cresson Springs, Pennsylvania, says the conductor to a large party going to the Union meeting of Jersey and Pennsylvania dentists. This gathering will doubtless augment the attendance of A. D. A. The query is, who the Jersey boys will make President this year? It was a good thought that both American and Southern bodies adjourn to meet at Chicago and do their legitimate business and adjourn. "The biggest show on earth," truly, *we hope*. Ex.

NEW YORK, July 1892.

REVIEWS AND ABSTRACTS.

TWO NEW DENTAL JOURNALS.

The *Dental Journal*, published by the Dental Society of the University of Michigan, editors, A. W. Diack, Miss C. M. Stewart and C. A. Hanley. This journal is published by the students of the University. The July number is a very creditable effort. There is a sketch of the dental department by Dr. J. Taft, the dean of the College, an article on Evolution, by H. F. Hussey, one on exposed pulps by Henry Milling, and several minor articles. The editorial department is filled with interesting matter, and it seems probable from the start that the *Journal* will prove of great value to all concerned. We wish it great success in its chosen field.

Revue Internationale L'Odontologie; editor, Paul Dubois; associates, M. M. G. Blacman, R. Chaurin, Ch. Godon, R. Heide,

E. Papot, A. Presel, A. Rounet and Maurice Roy. Editorial office, 2 Rue d'Amsterdam, Paris, France. Price 10 francs in France and Algiers, and 12 francs per annum in the Postal Union. M. Dubois, so long the editor of *L'Odontologie*, as we predicted, could not remain inactive, consequently we have before us this handsome 56-page monthly dental journal. M. Dubois has associated with him as collaborators some of the best known teachers in the dental school of Paris, and from his great capacity for labor, his disinterestedness in the course of dental reform and progress in France, we predict a brilliant success for the new journal. Since the foundation of the dental school and the establishment of the first journal, *L'Odontologie*, a new impetus was given to the science and practice of dentistry, very largely due to the herculean efforts of Dubois, Lecoudrey, Godon, Rounet, Blacman, Copot and their confrères. It is with pleasure that we note their new venture, as it is our sincere wish that they will succeed not only with this literary venture, but in their efforts to strengthen the morale of the profession in France by stamping out every species of quackery and charlatanism and gain that recognition from the State that the dental profession is entitled to in one of the most enlightened countries of Europe.

The first issue is devoted to the visit of Herbst at Paris, the new dental law, and much other matter of varied interest. The journal is well printed and carefully edited, and we felicitate the editors and publishers on its clean-cut and handsome appearance.

DENTAL COLLEGE COMMENCEMENT.

NATIONAL UNIVERSITY—DENTAL DEPARTMENTS.

The commencement exercises of the dental department of the National University was held at the Academy of Music, Washington, D. C., Tuesday evening, May 17, 1892.

The conferring of degrees was by Hon. Arthur MacArthur, Chancellor of the University.

An address to graduating classes was delivered by Prof. J. B. Hodgkin, D. D. S.

The Valedictory address was by Wm. S. Thomas, M. D.

The degree of Doctor of Dental Surgery was conferred upon the following named (4) graduates:

William E. Bradley, Cal.
Edwin K. Gerow, N. Y.

| Sheldon G. Davis, Ohio.
| David E. Wiber, D. C.

BOSTON DENTAL COLLEGE.

The twenty-fifth annual commencement exercises of the Boston Dental College, were held at Berkeley Temple, Boston, Wednesday evening, June 15, 1892. An address was delivered by B. S. Ladd, Esq.

Awarding of prizes, by the Dean, J. A. Follett, M. D.

Conferring of degrees, by the President of the college, I. J. Wetherbee, D. D. S.

Valedictory by Ellsworth N. Brown, D. D. S.

The degree of Doctor of Dental Surgery was conferred upon the following named (38) members of the graduating class :

John Charles Fremont Bridge.
Karl Schurtz Brock.
Ellsworth Newton Brown.
Richard Bullock Callaway.
Thomas Patrick Cahill.
Stephen Harry Chase.
Pearl Raymond Copeland.
Thomas Francis Cuff.
William Vaughan Davies.
Albert Jones Derby.
William Henry Duddy.
Walter Lovett Dunton.
Arthur Ellis Esterbrooke.
James Andrew Ewing.
John Wood Forbes.
Guy Norman Gammon.
Daniel Griffin.
William Irving Hervey.
Mozes Jessurun.

George Nelson Johnson.
Philip Patrick Kelley.
Albert Henry Ketcham.
John Stephen King.
Irving Miles Luce.
John Fletcher Maloney.
William Rodney Marsh.
Frank Rittle Mayers.
Norry Mielt.
Louis Dearborn Millett.
William Samuel Pearman.
Charles Nahum Piper.
Edwin Alexander Quinn.
Frederick Alexander Robinson.
Julius Stahl.
William Pray Swasey.
George Lawrence True.
John Edward Walsh.
Clarence Parker Whittle.

MEMORANDA.

Dr. Louis Augspath is the oldest practitioner in Arkansas.

A good location for a dentist is at Grantsburg, Wisconsin. So we learn.

Dr. Gordon White made an excellent presiding officer at the Southern meeting.

Dr. J. C. Story has retired from the editorship of the *Texas Dental Journal*.

Dr. Frank Harlan, of Atlanta, Ga., is an expert handler of the electric mallet.

Dr. Evans fuses a porcelain glass front on a gold crown without the use of solder.

Dr. S. R. Salazar, of Lima, Peru, was one of the visitors at the A. D. A. meeting.

The A. D. A. sections were all creditably prompt to make their reports when called.

On the first day at the Lookout meeting there were about 200 present, including the ladies.

The business of the American Dental Association was expedited under the efficient presidency of the genial Walker.

Many of the dentists in attendance at the A. D. A. were taken ill; a large number were indisposed a greater part of the time.

Dr. George J. Friedrichs delivered a polished address at Lookout, in response to the welcome of the Tennessee Dental Association.

Excepting the city of Buffalo, New York, there were more dentists at Niagara Falls, New York, from Illinois than from the State of New York.

The next meeting of the World's Columbian Dental Congress Executive Committee, will be held in Cincinnati, O., Tuesday, October 24, 1892.

Dr. Dunn, of Chicago, forces teeth apart by using dry cotton forced between the teeth, then tying a ligature around the cotton perpendicularly.

The twenty-third annual session of the Virginia State Dental Association will be held at Rockbridge Alum Springs, Virginia, beginning August 30, 1892.

Members of the American Dental Association should at once notify Dr. A. H. Fuller, Treasurer, 2602 Locust St., St. Louis, Mo., of any change of address, that they may appear correctly in the transactions.

Dr. J. Y. Crawford, of Nashville, on behalf of the Tennessee dentists, presented to Dr. Gordon White, President of the Southern Dental Association, a beautiful silver-mounted gavel made from historic wood.

The Southern Dental Association adopted resolutions protesting against the attempt of the census bureau to classify dentists as manufacturers. There are more than four hundred members of the association in good standing at the present time.

FIRST DISTRICT DENTAL SOCIETY OF ILLINOIS.

The First District Dental Society of the State of Illinois will meet at Peoria, the second Tuesday in September, 1892.

W. O. BUTLER, *Secretary*.

Dr. Geo. H. Watson, of Berlin, Germany, was a visitor at the Niagara Falls Meeting.

Dr. W. W. Walker, Chairman of the Executive Committee of the World's Columbian Dental Congress, sailed for Europe August 10th, to be gone two months. Dr. Walker will look after the interests of the Congress while in Europe.

Dr. George Evans makes a base plate gutta-percha cup, using two or three thicknesses, bending it over flat, making a base for it to stand on, so it will not tip while using. When he desires to use a gutta-percha solution for any purpose he drops a little chloroform in the bottom of the cup, and the solution is made instant. By adding the thickness of a new sheet when the old one is used up, he has a perpetual bottle without using a cork.

Chicago was well represented at Niagara: Geo. H. Cushing, W. W. Allport, John S. Marshall, A. W. Harlan, J. W. Wassall, J. A. Swasey, T. W. Brophy, Frank H. Gardiner, Louis Ottofy, J. A. Dunn, W. H. Taggart, T. Menges, W. B. Ames, E. D. Swain, A. W. McCandless, W. H. Prittie, Garrett Newkirk, C. S. Case, B. J. Cigrand, B. J. Roberts, and J. D. Banes. From outside of the city but from within the State of Illinois, were J. J. R. Patrick, Belleville; G. D. Sitherwood, Bloomington; F. S. Eiles, Blue Island; T. W. Pritchett, Whitehall.

SOUTHERN DENTAL ASSOCIATION.

At the last meeting of the Southern Dental Association the following officers were elected for the ensuing year : President, B. Holly Smith, Baltimore, Md.; First Vice President, R. K. Luckie, Holly Springs, Miss.; Second Vice President, S. B. Cook, Chattanooga, Tenn.; Third Vice President, L. P. Dotterer, Charleston, S. C.; Corresponding Secretary, D. R. Stubblefield, Nashville, Tenn.; Recording Secretary, S. W. Foster, Decatur, Ala.; Treasurer, H. E. Beach, Clarksville, Tenn.; Executive Committee, Gordon White, Nashville, Tenn., and W. R. Clifton, Waco, Texas.

Thirty-five of the forty-nine States and Territories in the Union have accepted the building sites assigned them on the Exposition grounds, and have submitted to the construction bureau for approval the plans of the buildings they propose to erect. Nearly all the others, it is known, are about ready to take like action. Every State and Territory, with perhaps three exceptions, will erect a building. Quite a number of these buildings will be reproductions of historic structures such as Independence Hall, Washington's Mt. Vernon home, old Fort Marion, etc. They will occupy the northern portion of the Exposition grounds and will be surrounded by walks, lawns, shrubbery and flowers. They will be used as headquarters for State boards and visitors and as receptacles for exhibits showing State resources, etc.

ABNORMAL MENSTRUATION—TOOTHACHE.

I have a patient now having a menstrual period who has not menstruated for the past thirty years. She has raised a family, and is now nearly seventy-six years of age. She has enjoyed fair health usually through life. Is of a very industrious, temperate and moral disposition. Now, as the forceps, ergot, post-partum hæmorrhage and bloodless labor have all been thoroughly discussed, I propose that we gather up a reliable history of menstruation during old age for a change. I start with seventy-five years and seven months. Now menstruating this 27th of April, 1892. I should like to hear from the general profession of their knowledge of all similar cases through the *Brief*.

Immediately relief will be obtained by painting the tooth and gum with a ten per cent solution of cocaine, made by dissolving the cocaine in pure alcohol.—*I. Humphrey, M. D., in The Medical Brief.*

Fairbury, Neb.

NORTH DAKOTA STATE DENTAL SOCIETY.

The annual meeting of the North Dakota State Dental Society will be held in Grand Forks, August 17th and 18th, 1892.

Among the papers to be presented will be "Pioneer Dentistry in North Dakota," by Dr. A. T. Bigelow, of St. Paul, who was the first dentist to locate within the bounds of our State.

"Post Graduate Study," by Dr. Louis Ottofy, of Chicago, well known to all the old practitioners of North Dakota.

Dr. T. E. Weeks, of Minneapolis, will also be present and contribute much of interest to all who desire to keep abreast of the times in professional advancement. Let every dentist make an effort to be present and contribute something to the general interest of the meeting.

There will be a special session of the Board of Examiners for the benefit of any who may desire an examination for license to practice.

Fraternally yours,

S. J. HILL, Secretary.

THE DENTAL REVIEW.

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CHICAGO, SEPTEMBER 15, 1892.

No. 9.

ORIGINAL COMMUNICATIONS.

THE FIRST PERMANENT MOLAR.

BY DR. J. H. WOOLLEY, CHICAGO, ILL.

One of the great difficulties that a professional man has to avoid is that of hobbies and narrowness of view. Opinions should be formed slowly, and then only upon careful research, close study and patient plodding, with a constant comparison of notes.

The subject of this evening, the First Permanent Molar, is one upon which there are wide differences of opinion. I cannot expect to treat it with that thoroughness which it deserves in the time placed at my disposal. This subject has so great a range, connecting itself with so many departments of dental science, that if I can cover two or three points in the discussion it is the most I can hope to do. To successfully treat this subject requires a good deal of experience and research, extending through years of observation, and with the comparative little study I have given it, I fear that my opinion will not be worth much.

The jaws and teeth of our little patients are like clay in the hands of the potter, to be shaped from a good or bad design. Our best results are gained by experience extending through years of painstaking toil. Many times have we blundered, not only at the expense of the patient but of ourselves.

I am inclined to compare the first permanent molar to a waif or outcast in the street, that is neglected through ignorance of its true value. The condition of the teeth, either healthy or unhealthy, is owing to hereditary and parental influences, together with the kind of care the child receives before and after their eruption. At the

time the first permanent molar is calcifying, there are physical causes at work to disturb its harmonious growth and development, springing from diseases of childhood. We are also to consider that we are living in an age of ceaseless activity. All are pushing to the front and forcing themselves to the highest tension, and children brought into this world under such conditions inherit a highly nervous organization. When we consider that the most rapid growth of the brain takes place before the age of seven (according to many physiologists), we find it growing at the expense of the other organs. Not only the bones of the body, but the teeth suffer from this rapid development of the nervous structure. When we consider all these facts, together with the brain-forcing the child receives, it is not strange that we see diseases of childhood occurring to retard its proper physical development, and that of the teeth naturally included. Neglect, caused by ignorance on the part of parents, who think these teeth belong to the first set, plays a prominent part in this early destruction. These teeth appear at a time when many of the temporary set are decayed and the mouth is in a condition to help along any predisposition to decay. If parents were well informed as to the time of eruption of the first permanent molar and would place their children in the care of a competent dentist, a large majority of these teeth could be saved. Having thus considered the causes at work to prevent a perfect development of the first permanent molar, let us now pass to other phases of the subject.

Mr. Tomes in his record of 3,000 extractions states that one-third of them were the first permanent molars. This does not seem to me a fair test, as a great many, perhaps a majority, of extractions occurred among the poorer classes in hospital practice.

I have tried to briefly show what causes were at work to prevent a healthy growth and development of these teeth. Considering the circumstances under which they have erupted, there are many who believe them to be short-lived, but they also believe they should be preserved until the time when the twelfth year molar first makes its appearance. There are many who believe that these teeth being lost at so early an age, are consequently more liable to decay. They claim that the time of life when these teeth are erupted, and the condition of the mouth, etc., are the reasons why these teeth are lost at an early age. It is said that space is gained by the removal of these teeth which prevents the remaining ones from decaying, and that in case of irregularities,

and a crowded condition of the teeth, their removal will give room for the proper replacement of the remaining teeth. The answers to these objections given by Dr. Arthur are the same that are found in the experience of many dentists and my own as well. I will try to show some of the reasons why so many of the first permanent molars are lost.

About the time the central incisors are shed four new teeth appear. They are the first permanent molars. As I have said before, they appear at a time when many of the first teeth are still in the jaw; and through carelessness, or inattention on the part of the parents, they are overlooked, or if noticed, they are supposed to belong to the temporary teeth; consequently it is only when the child is suffering from the toothache, that it is brought to the dentist. The teeth may be slightly decayed, and the dentist fills them. Now the child at this age is difficult to manage, if dental operations are to be performed. Many dentists prefer not to have children under their care at all, and when they are obliged to take charge of such cases, they hurry through their operations. What is the result? They are usually imperfect and sometimes a complete failure. Besides, the parents' sympathies are enlisted in behalf of their children, and the dentist is encouraged to believe that if the operation does not prove a success he will not be blamed. These considerations are unworthy of the man professionally and morally. He has shirked his responsibility of educating the parents in regard to the care of their children's teeth, and believes it is of little consequence whether they are saved or not, after the twelfth year molar is erupted, as the latter takes its place.

By the extraction of the first permanent molar it is claimed that more room is given for the bicuspid and cuspid teeth to move back, and that the spaces thus made render the teeth less liable to decay. It is urged that the twelfth year molar will take the place once occupied by the first permanent molar. Rarely have I seen that the bicuspids have separated enough to prevent their decay. I have found, as others have, that, when the first permanent molar has been extracted, it made very little difference in regard to the decay of these teeth. In regard to the extraction of these to correct a crowded condition of the arch, and particularly of the front teeth, I will say, according to the laws that govern the movements of the teeth, I have found that they always move forward and rarely backward. Dr. Arthur is quoted as saying, "where the front teeth are

crowded, he has never known them to change their position, as a result of the extraction of the first permanent molar, without mechanical assistance." He cites a case where "four first permanent molars were extracted, and the second molars came forward in time, until they touched the second bicuspid both above and below." The absence of the extracted teeth, he says, "would not have been observed, except by dentists, yet all of these teeth were attacked by decay on the surfaces in contact." Now in regard to the removal of the first permanent molar to correct irregularities, there may be exceptional cases where necessity demands it; there may be cases when these teeth by carelessness, as before shown upon the part of the parent or dentist, have reached that stage of decay requiring their removal. But that these should be removed to correct irregularities, I believe to be a mistake.

Is it true that irregularities of the teeth are necessarily caused by lack of room in the jaw for them to assume their natural position? It is the opinion of many authorities that there are other causes at work to produce irregularities. Dr. Kingsley says: "The conclusion then is this: Laying aside all cases that may be due to an inherited tendency to follow or exaggerate some given type, together with those which are manifestly due to forces operating only after eruption, the primary cause, so far as the individual is concerned, of any general disturbance in the development of the permanent teeth, showing itself particularly in their malposition, is directly traceable to a lesion or innervation of the trigeminal nerve; it is an interference, more or less prolonged, with one of the prominent functions of that nerve, and operating at its origin. While there may be no way to prove this by any examination, microscopical or otherwise, while the nerve center is under this influence, it is nevertheless sufficiently proved by secondary phenomena which could only have originated from such a source. The function of the trigeminus, thus stimulated or interrupted, is that which supports, regulates and governs the nutrition of the tissues to which its terminal branches are distributed." He further says: "During the formative and eruptive periods of the permanent teeth, they are under the influence of an independent and peculiar vital (nervous) force; this innervation pushes on their development, regardless of the more tardy growth of the osseous system; being implanted in a crowded position in undeveloped maxilla, they never have an opportunity to recover

from it, and emerge in the same disordered arrangement in which the crowns were formed. In these positions, when fully erupted and surrounded by their alveolar walls, they become fixed, regardless of any subsequent growth of the jaw; for it is one of nature's laws that when the climax of development has been reached and the type is complete, function ceases."

Mr. Tomes also says that the teeth when they are erupted do not come down and take a place in bone already prepared for them, on the contrary, that which is there to start with, is absorbed and the bone in which they are ultimately implanted is built up around them, no matter what position they assume subsequent to their eruption. He also says, the size of the dental arch is not absolutely fixed by the size of the jaw; this has been confirmed by others, and in my own experience as well. In a great majority of models of mouths that I have obtained in cases of irregularities, by measurement I have found room enough in the jaw to bring all the teeth into proper position without extracting the first permanent molar. Dr. Lord does not now believe in the extraction of these teeth, and confirms the opinion held by Dr. Arthur, and also considers them the most important teeth in the jaw, in preserving its natural size and shape, and preserving the teeth in their natural strength and position. He further says that "by their extraction how often do we see so much lopping of the remaining molars and bicuspid, as to occasion great loss of grinding surface. By this shortening, under force is brought upon the front teeth, with very unfortunate consequences." He believes we should begin the care of these teeth in time and prevent caries upon their surfaces, for the decay can be stopped as readily in these as in any other teeth. If they come to us badly decayed he believes in breaking down the corners or sides of the crown, and not in building them up, leaving as much as can be saved with certainty.

Again, I believe that extraction of any of these teeth causes a depression of the face and a loss of individual expression. In the regulation of teeth we have to consider what relation they bear to facial expression, and also the effect the shape of the arch has upon the human voice. When the former is narrow, cramped and pinched, the latter takes on a nasal tone. If the arch is widened the voice becomes rounder and fuller. In a private letter from Dr. G. V. Black he gives some very forcible reasons for the

retention of the first permanent molars. He says, "The one point that I have especially urged is the office of the first permanent molar in holding the jaws in position during the process of the shedding of the temporary teeth." He adds, "This point so often overlooked, I deem very important. These teeth take their position before the beginning of the shedding, and while the antagonization is otherwise broken up they hold the jaws in position and prevent any twisting of them by the powerful masseter and temporal muscles; a thing that is very liable to occur if this support is lost by the removal of any one of them before the twelfth year molars have come into position." This forcible argument given by Dr. Black for the retention of the first permanent molars should be heeded as good advice to us all. He believes it very important for these teeth to be preserved, at least until the twelfth year molars have come into position. I have heard him say, "If these teeth, the sixth year molars, could be kept until the child has arrived at his teens, their chances were good for a permanent retention." He further says, "My study of the comparative liability of the teeth to decay at the different periods of life, shows that the first molars are attacked in the first two or three years after eruption, much oftener than any other tooth. But in after years they are attacked less often than the second. If both the teeth are in a fair condition at the age of fifteen, the chances for the first are better than those of the second. Decay occurs on the surface of the second molar much oftener than in the same locality in the first, and is much more difficult to treat."

I do not mean to be understood as saying that the causes I have mentioned, are the only ones that bring about the malposition of the teeth. For we know in some of our own cases, that the roots of the temporary teeth, when left in too long, sometimes divert the direction of the incoming tooth from its natural position. It is claimed the first permanent molar is a frail tooth, consequently will not last but a few years. From the experience that I have had in the treatment of these teeth for many years, I have found that if they are watched with the same zealous care as others, they in all probability can be saved. The coffer-dam should always be used in making a thorough examination of these teeth. By this means, the surface of the crowns can be more critically examined. Sometimes you have to exert some pressure in exploring out decay, the fissure not being well defined. Very often a slight

decalcification is discovered, which can be stopped by a small filling, but which if neglected will spread and soon involve the whole crown, and eventually the pulp, finally resulting in the loss of the tooth. In regard to the mesial surfaces of these teeth, if the adjacent temporary molars are in close contact, they should be separated by cutting away their distal surfaces with a safe-sided file; and if the mesial surface of the first permanent molar is superficially decayed, proceed to remove this decay and polish the surface. Whether these teeth are extracted singly or all four at once, whatever time it is decided to extract them, it is rarely the case that any of the evils existing are remedied. The tipping or lopping of the crowns of the remaining molars has almost always occurred, occasioned by the loss of the bones and tissues, as the result of the extraction of the first permanent molars.

Before concluding, a word should be said on the treatment of these teeth. I found them more difficult to successfully treat in the first few years of my practice, than subsequently. The reason of my early failure was because I had comparatively limited knowledge of the nature of these teeth, for I treated and filled them the same as others. I have since found greater care is necessary in their treatment, and as far as filling large cavities is concerned, my mode for the last few years has been different from that followed in my earlier experience. In large cavities, where the inner surface is sensitive, without nerve exposure but with a thin covering of dentine over the latter, I fill with the cements, allowing this filling to remain in the tooth anywhere from one to six months. I am careful first to flow over the floor of the cavity this cement in a soft state. After it hardens I then fill the remainder of the tooth with the same material mixed harder. When this cement begins to wear, if the patient has had no trouble with the tooth, I remove the cement, leaving only enough to cover the floor and walls of the cavity, and allowing none to remain against the margin of the cavity. I then fill with tin and gold foil combined, or whatever material is best adapted for the case. I believe these teeth to be more susceptible to thermal changes when metallic fillings are used, than any other teeth. I have found it so at least, and as before said have lined the larger cavities with the oxyphosphates. I believe the pulps of these teeth are more susceptible and more tender, in the first few years after their eruption than in any of the other teeth. When these teeth (particularly in the first two, pos-

sibly three years after their eruption) are studied histologically, and their nature and resources are well understood, the universal verdict will be, that when taken in time and properly watched, it will be the fault of the dentist and not the teeth, if in most cases they cannot be saved.

HYPNOTISM AS APPLIED TO DENTISTRY.*

BY THOMAS FILLEBROWN, M. D., D. M. D., BOSTON.

Hypnotism is the modern name for a physical condition which has been observed for many centuries.

It was known to the earliest races of Asia and among the Persian Magi, and to this day the Yogis and Fakirs of India throw themselves into a state of hypnotic ecstasy and reverie by fixation of the gaze.

It has been known by the names of Trance, Fascination, Magnetism, Mesmerism, Electrical Psychology, Animal Magnetism, Electro Biology, Braidism and Hypnotism, and the science in its remedial action is now called "Suggestive Therapeutics."

Down to near the end of the eighteenth century this condition was imperfectly recognized, yet about A. D. 1600, Von Helmont wrote a work on the Magnetic Cure of Wounds, and Kircher, in 1646, described catalepsy produced in animals.

Mesmer, born in 1734, and graduated an M. D. in Vienna in 1766, a man of great ability and much learning, discovered methods of producing this hypnotic condition at will in a very large majority of cases. His theory was that a fluid passes from the operator to the patient, and vice versa, and through this medium the influence was transmitted and the effect produced. He called this a magnetic fluid, and for fifty years the theory of animal magnetism prevailed, and is still held by very many. Mesmer's popularity was so great that the public called the condition thus produced, mesmerism.

In 1778 Mesmer came to Paris and announced his discovery. He made many cures. Thousands flocked to him for treatment. He hypnotized as many as 8,000 in a single year. Mesmer's methods of conducting his clinic were open to criticism. Professional opinion did not sustain him, and shortly he left Paris in disgust. Later he returned. The government took notice of

*Read before the Massachusetts Dental Society, July, 1892.

him and appointed a commission to examine his claims and practice, and offered him a life pension. He did not accept, but chose to return to Prussia, and there continued to practice his art until he died.

From 1780 to 1841 mesmerism ceased to claim public notice as a remedial agent, though individuals practiced it.

In 1812 the Prussian government sent Wolfart to Frauenfeld, where Mesmer had settled, to examine and report. Wolfart not only declared in favor of Mesmer, but adopted his practice in his hospital treatment.

In 1817 a law was passed in Prussia confining the use of magnetism to medical men.

In 1820 Du Potet began a series of observations at the Hotel Dieu, and in 1825 the French Academy of Medicine appointed a commission to examine the claims of animal magnetism. The report concludes thus: "Considered as the agent of physiological phenomena or as a therapeutic expedient, magnetism must take its place in the scheme of medical science, and consequently it should be practiced by physicians only."

John Elliotson used it in his practice in London in 1837. Dr. James Esdaile, in 1845, had in Australia made a record of 100 cases of anæsthesia for surgical operations, when the English government placed him in charge of a hospital, and in 1851 he had completed a record of 261 cases of complete insensibility to pain in severe surgical operations, by the use of hypnotism.

In 1841, James Braid, of London, examined into the subject and experimented with it. He became satisfied that no magnetic or other fluid was concerned in the matter, but it was simply a condition of the patient, induced by outward circumstances, suggesting to him this state. To rid the science of all personality, he proposed the term hypnotism, from hypnos, sleep, and since that time it has been called by that name. There was for a while a disposition to call it Braidism, but it did not obtain. In 1843, Dr. Braid published a work on hypnotism and continued to practice the art. Also in this year, Dr. Joly, of London, amputated an arm painlessly by means of hypnotic suggestions, and the great Liston made use of it successfully, and Velpeau and Broca reported that they had employed hypnotism satisfactorily in twenty-four operations.

M. Liebault, of Nancy, near Paris, had a copy of Braid's book

fall into his hands. He studied it, believed in it, and in 1860 opened a clinic and practiced the art among the poor of his village. He soon found that audible suggestion increased his success, and he soon demonstrated that suggestion was the key to all remedial effects of hypnotisms, and if enforced by the voice through the auditory nerve, it was made much more effective than without. This came to be his constant practice, and is to-day the theory upon which all hypnotists act. Braid did not fully recognize *suggestion* as the cause of the cures, and hence did not seem to find the key to so complete and uniform success as has been since obtained.

While Braid may be considered the father of modern hypnotism, Liebault is the one who took the child, watched its growth, educated it, perfected it, and put it before the profession full grown to the stature of a man and entitled to the name and rank of a science.

For twenty years Liebault continued to practice hypnotism, quietly going his own way, looked upon by the profession as a crank and passed by with a slight.

But Liebault's continued success compelled attention, and in 1881 M. Dumont and Prof. Bernheim, of the hospital at Nancy, attended his clinic, studied his methods and witnessed his success. Prof. Bernheim became convinced that there was something of value in it, and forthwith applied it in his hospital practice, and with the results described in his great work on suggestive therapeutics, first published in 1886 and rewritten in 1889.

Bernheim himself had in 1889 hypnotized over ten thousand times, and to-day it is practiced by some of our best men in all parts of the globe. It has passed the stage of experiment and is no longer under the ban of charlatanism, but is considered as one of the most useful remedial agents at our command, and no physician can be considered truly progressive who refuses to inquire into the subject and admit the possibilities of its usefulness; and he who does not use it is missing the means of curing maladies that nothing else will heal.

WHAT IS HYPNOTISM?

Hypnotism is a misnomer, but it has become so firmly fixed that it is useless to attempt any change or substitution. Generally patients do not sleep in the sense of being unconscious, as in ordinary sleep. They are fully conscious, their faculties are keenly active,

and their perceptions more acute than when in their usual state; still the condition of the nervous system is radically different.

We have said hypnotism is a misnomer, yet no one has suggested a better name. We call it sleep to induce it, and we call it sleep to continue it, and we call on the patient to awake when we wish to terminate it; hence it must be considered sleep, though in most cases not inappropriately conscious sleep. "The great essential feature of hypnotism is not sleep, but a heightened receptivity of suggestions with or without sleep; in other words, any suggestions offered to a person during hypnosis has an exaggerated effect in his mind." But up to a certain point, that of lethargy, the deeper the sleep the greater the effect of the suggestion.

The mind seems to become nonresistant, and old thoughts are held in abeyance, and new thoughts are suggested and received to hold control, so that sometimes, during a single hypnosis, a condition directly opposite to that which previously existed may gain permanent control. Courage may succeed fear, rest replace fatigue, and sweet natural sleep come to the patient instead of insomnia.

HOW INDUCED?

It is impossible in one short paper to describe many methods of inducing hypnotism, and I must be content with a description of the one method which has proved so successful with the Nancy School, described substantially as follows by Bernheim:

"When the patient becomes quiet and assured, I hold my two fingers of my right hand before the patient's eyes and ask him to look at them, endeavoring at the same time to concentrate his attention upon the idea of sleep. I say, 'You think of nothing but sleep, your eyelids begin to feel heavy, your eyes are tired, they begin to wink and they are getting moist, you cannot see distinctly, they are closed, you are asleep.' Repeating the word 'sleep' in commanding tones will often turn the balance, and the eyes close and the patient sleeps. Sometimes I close the eyes immediately without use of fixation of the eyes, when by suggestion sleep follows.

"The patients usually find the object looked at grows indistinct. The eyelids blink and quiver, the eyes may water, the breathing frequently becomes quickened and may even be panting, though often it shows only the quiet, deep breathing of normal sleep, the pulse is often accelerated, then the eyelids gradually close and

the patient is asleep. Sometimes the eyes shut suddenly, sometimes remain open and have to be closed forcibly."

DEHYPNOTIZATION.

For most patients the simple suggestion "Wake up" is quite sufficient to terminate the condition. Occasionally it may need to be repeated perhaps a little more emphatically. If the arousing is sluggish, fanning or blowing on the face is useful, with the command "Wake up" repeated. A slight shock, as a slap on the arm, will quicken the termination of the condition. No hypnotist of good technical knowledge has ever had any difficulty in arousing the patient from the hypnosis at will.

There are many ways of estimating the amount of hypnotism. Bernheim divided it into nine distinct stages, Liebault into six, while the most simple division is *conscious* and *unconscious sleep*.

I have adopted the classification of Dr. Tuckey, of London. 1. Light sleep. 2. Profound sleep. 3. Somnambulism. 4. Lethargy.

The most of my patients have not gone beyond the second stage, a few reached the third, and one a very deep somnambulistic state.

Among my dental cases there have none gone beyond the third stage. I earnestly recommend the careful study of Bernheim's great work. If any one desires to understand the science and the art, there will be found a complete and exhaustive treatment of the subject.

WHO CAN HYPNOTIZE?

Undoubtedly every one has the power in some degree. It seems to be one of the faculties of the human mind. Some have not enough of the faculty to amount to anything practically, while others have great ability in that way, while between those two extremes are all degrees of skill, according to nature and education. I consider it like the mechanical talent in man. Such are born mechanics, while others can never attain to **any** useful degree of skill.

It is as reasonable to expect success with hypnotism as for any good operator to succeed with any of the important operations in dentistry, and success with hypnotism will be at least as general as is success in the general practice of a dentist. There is nothing occult or strange about it, and nothing for any one to fear.

WHO CAN BE HYPNOTIZED.

The same answer as before serves. Some hypnotize very readily and deeply ; the other extreme are not effectual enough to be noticeable, while between these extremes are all grades of effect. Bernheim and other good authorities say that an ordinary good operator will hypnotize seventy per cent of all his patients ; an operator who is especially experienced, careful and persistent, will attain eighty per cent, while exceptional natural ability and cultivation may obtain good results in as many as ninety per cent, but the last is exceptional. Dr. Kingsbury, of Dublin, considers six successes out of ten trials to be good results. My own cases have been exceedingly favorable. I have failed in not more than one case in fifteen, but mine have been selected cases, and I do not consider my experience extended enough to fix any definite per cent.

IS HYPNOTISM DANGEROUS ?

The condition itself is not in the least dangerous. The patient is put into a quiet sleep, being light or deep as the susceptibility of the subject may determine. The patient is comfortable and resting, and if left alone will usually in fifteen or twenty minutes wake spontaneously as from a natural sleep. The hypnosis wears out. The patient may feel drowsy for some time longer, but soon returns to the former condition of wakefulness, but the quiet calming influence of the hypnosis is sure to remain.

Mr. Liebault says, "The accidents in hypnotism are due wholly to the ignorance of giddy tricks of the operator."

Moll says, "It is insufficient technical knowledge that is dangerous, not hypnotism. Hypnotism properly used is as harmless as electricity properly used."

CAN HARM BE DONE WITH HYPNOTISM ?

I believe there can be. Anything that is powerful for good is also powerful for evil. Suggestion will cure headache ; it will also cause headache. It will relieve contraction of the muscles, so it will cause it. Suggestion will stimulate good thoughts, and so it will give rise to bad thoughts.

But hypnotism can never do one tithe of the evil that alcohol and opium have done and are doing. They do their evil when used for good purposes by innocent and well-intentioned persons,

and they usually have done their work before the victim is aware of it. Hypnotism can do no harm unless the operator is unpar-donably ignorant or basely vile. Whatever ill or unpleasantness has seemed to attach to hypnotism has been when in the hands of amateurs or ignorant persons, who have at the time lost control of themselves and become frightened, and have frightened their subjects and lost control of them. No competent operator need have any fear for himself or his patient.

Patients so far as they are asleep are in an anæsthetized condition, and all the physical sensibilities are lessened, and facts show that the will becomes strengthened instead of weakened, and the patient is the better able to command himself.

Any thought averse to a patient's conviction is almost sure to rouse them, and it is very difficult to make even a somnambulistic subject do acts which violate his convictions even in a slight degree, and while a subject when hypnotized has been made to seize a paper cutter for a dagger and stab a door panel for a man, no violence has ever been recorded as a result of a post-hypnotic suggestion. In the few cases where personal submission seemed to have been the result of hypnotic influence, it to my mind is very evident there was not a state of complete unwillingness. Used by honest operators for therapeutic purposes, the influence of hypnotism is only for good.

The subjects previously mentioned, for whom the surgical operations were so successfully performed under hypnotic anæsthesia, were all subject to deep hypnosis, somnambulistic degree, and while exceptional cases of successful *Dental Anæsthesia* have been recorded, no uniform success has been attained or believed possible.

For a quarter of a century I have been hoping that the principles as now developed in hypnotism might be applied so as to bring relief to patients during dental operations, and it is with pleasure that I am able to-day to report a pronounced success in that direction.

A success I believe will continue, and the methods will be so formulated that the art will be within the reach of every intelligent operator on the human teeth.

During the past year, and especially during the past six months, I have been carefully studying the later works on hypnotism. I found that all the writers upon the subject, as far as I could learn, stated that pain would always wake a patient from the

hypnotic sleep, unless such patient was in a somnambulistic condition. I felt it might be quite possible to derive distinct benefit in the lighter stages if they could be kept continuous. I soon *believed* it possible, and after a diligent study of Bernheim, I commenced to hypnotize, and my first effort proved a success, the patient reaching the second stage.

Early in March I felt equal to a trial for anæsthetizing dentine for excavating, and then made the discovery that continuous suggestion makes it possible to keep a patient hypnotized, and the dentine wholly or partially anæsthetized for a full preparation of a cavity during the light sleep of the first and second degree. I am not aware that this has ever been made successful before.

I maintain the hypnosis and the anæsthesia by a constant repetition of "Sleep, sleep, you are resting, you are not suffering, you are not dreading it, you do not care for it, sleep, sleep," and so on continuously so long as the condition is desired. It is practically a continual rehypnotizing to offset the continual waking caused by the cut of the instrument.

Sometimes the hypnosis will wear out in spite of continual suggestion, especially if the operator's attention is too wholly absorbed in the operation and his suggestions become weak. In such a case I stop and hypnotize again. I have hypnotized as many as six times at one sitting.

If the sitting is long and the hypnosis deep, the patient is likely to get tired, and I have found it better to wake them up at intervals for rest or suggest a ready change of position, but the waking is much better. By making this conservative use of hypnotism, the patient in every instance will feel rested and stronger at the close of the sitting than before, and will improve in courage and quiet as the sittings succeed each other, and in many cases the need of hypnosis will cease to exist and the patient submit to the operation in the wakeful state without shrinking.

I had a case lately that illustrated it. A girl fourteen years old had dreaded dental operations so much that for two years she had not been able to have her teeth even cleansed. Hypnotism made cleansing, preparing and filling perfectly easy, and at the fourth sitting she had become so indifferent that she was quite willing to have a large cavity in a molar prepared and filled while fully awake. Others have experienced the same benefit.

These results have, it seems to me, proved that in my hands

hypnotism as a sedative and as an obtundent is a marked success, and, I believe, equal and greater successes may be achieved by many other operators when they make intelligent effort to accomplish this desired end.

I give the following summary and analysis of twenty-one consecutive strictly dental cases, that you may judge from the record of the success of the anæsthesia. One patient failed to hypnotize. In every one of these cases it was proved that the dentine was very sensitive.

Hypnosis was applied thirty-eight times to twenty patients. Full anæsthesia of the dentine attained twenty-one times for eight patient, or for forty per cent of the patients.

Anæsthesia not quite complete, but practically successful, twelve times for seven patients, or for thirty-five per cent of the patients.

Anæsthesia complete with addition of alcohol vapor with Small's obtunder, six times for five patients, or for twenty-five per cent of the patients.

For use in surgery I record the following :

Applied successfully for removal of necrosed bone, once.

Applied successfully for extracting teeth, five times.

Applied successfully for operations on alveolar abscess, once.

Applied for removal of dread of taking gas to two patients—successful, one; unsuccessful, one.

It is impossible to indicate in any table all the benefit that accrues to the patient from the hypnotism.

In every case there was almost complete and in most cases entire relaxation of nervous and muscular tension, so that the patient rested during the operation instead of being exhausted. Almost every patient left my operating chair, saying they felt better than when they sat down. I always suggest that the patient is resting, will wake up refreshed, will be undisturbed, and this result uniformly follows. If by any chance a different result obtains, I at once hypnotize again and correct the error. This has occurred in a few instances, but thus far I have not failed to relieve the discomfort.

Another distinct gain has been described by several patients independently, viz.: When any pain is felt, it is sensed only at the point of contact of the instrument, and not over the whole system as is commonly the case. If a tooth is extracted, there is no dread

felt before the operation nor shock produced by it, only a little twinge felt the instant the tooth is being pulled.

A worthy Scotchman expressed himself to the point, after having a tooth extracted under hypnotism, "I rather think it helped me, it kind of reconciled me *down to it*."

The operation for necrosis mentioned was for a patient whose nervous system was much broken down. Any excitement from sorrow, fear or joy would invariably cause her several hours of nervous excitement and distress, entirely disabling her at the time. The hypnosis prevented any unfavorable results from the operation.

CASES.

I give the following cases in the order in which they followed, that you may see my progress in the art of hypnotism as well as of the anæsthetic effect.

Case 1. March 14th. My first attempt to hypnotize for dental purposes was for Miss L. — age twenty-two, to remove pulp after arsenic application. She hypnotized in about one minute to the first degree; very light sleep. I suggested anæsthesia of tooth and pulp. It lessened the pain very much; could not overcome all the sensitiveness of the pulp, nor have I been able to do so since in any case.

April 12th. Hypnotized and suggested for relief of toothache and restfulness, as she was very weary. Waked her in five minutes and found her toothache gone and herself feeling entirely rested and refreshed.

Case 2. March 16th. Mrs. L. —, aged thirty-six. Hypnotized first degree, very light sleep. Suggested for anæsthesia of sensitive dentine. Pain during previous operations almost unbearable. Relieved sensibility very much. Made the cutting of two cavities on buccal surface of inferior bicuspids with both excavator and bur very easily borne. Suggestion did not last long, and hypnosis and suggestion had to be repeated several times.

Case 3. March 22. Miss C., age fifty. Necrosis from abscess on R. Sup. Lat. Incis. Upper teeth all extracted five months before. The patient had nervous collapse seven years before and has since suffered repeated attacks. Any excitement of joy, sorrow or fear, or a pleasant hour with callers, would bring on a nervous spasm which would last one or two hours. Ether had an unpleasant effect upon her, and she preferred the operation without an

anæsthetic on account of nervousness. Hypnotized first degree, bordering on second; applied cocaine to gum; incised and removed sections of gum; trephined the alveolar wall and removed spiculæ of dead bone. The operation lasted from seven to ten minutes. Patient laid quietly, scarcely flinching; dread all gone; upon awaking pronounced herself comfortable during the operation and suffering no shock, depression or weakness.

I did not think to suggest against subsequent pain, and some pain persisted in region of wound, also her temple and ear of same side. Hypnotized the second time and relieved the pain in wound and face. Waited twenty minutes, thinking the rest of the pain would subside; pain in ear persisted. Hypnotized the third time and suggestion relieved pain entirely, and the patient left my office feeling in very much better condition than before the operation.

March 28th. Had been getting along well, wound healing, nervous condition good, some neuralgia of head, face, arm and hand. I hypnotized and suggestion relieved the pain entirely.

March 29th, A. M. No return of pain in the arm or hand, a little pain in the head last evening and to-day. Hypnosis and suggestion relieved it again completely. At 4:30 P. M. called again. Had been very busy during the day out in the wind, and tic of right temple had returned and involved the eyes. Hypnotized twice and completely relieved the trouble. The patient left town the next day, but subsequently I saw her and found relief from pain proved permanent, also the general good effects of the hypnotism continued.

Case 4. March 29th. Mrs. P——, age forty-five. R. Sup. 1st Molar abscessed. Crisis passed. tooth very sore, dead pulp remaining. Tooth needed drilling for removal of pulp. Patient dreaded the operation very much; did not sleep the night before on account of it; had a bad headache and neuralgic pains over entire system. Hypnotized to second degree, dread entirely removed, scarcely any hurt during the operation; was very comfortable and did not mind it at all; systemic pains cured. Filled temporarily and hypnotized again, and suggested recovery without further trouble.

April 2d. Found tooth in good condition; filled permanently; hypnotized and suggested for continued health of tooth and system. The tooth has since remained well.

Case 5. March 31th. Prof. O——, age thirty-five. R. Inf.

1st Molar to be extracted, very badly abscessed. Hypnotized to first degree. Suggested that pain of extraction would be lessened and dread removed and shock prevented. The result fulfilled the prophecy.

April 14th. Had a R. Sup. Bicuspid root; had wished it out for ten years; could not get up his courage. Hypnotized to note effect on his mind; soon opened his mouth without dread; extracted tooth; felt no pain, only a little wrenching sensation, only local. He called it perfectly successful.

April 7th. Excavated and filled R. Inf. Lat. and Cusp., very tender indeed. Hypnotized; relieved sensitiveness very much, and with alcohol vapor added made the anæsthesia complete. Patient said the pain was only local; did not disturb the system; found great relief.

Case 6. March 26th. Dr. P. — Dentist, age thirty-four. Filled R. Sup. Cusp. lab. cavity; exquisitely tender. He was unable to bear his finger nail on it. Hypnotized, second degree, light; anæsthesia almost complete; nervous and muscular relaxation entire; used excavator and burs with engine all around the cavity; and in twenty minutes from the time he sat in my chair the cavity was prepared. He found it a complete success.

April 1st. Filled R. Sup. Cusp. mes. cavity, not tender; did not hypnotize at first. When tooth was nearly filled said he felt broken up; was very much disturbed. Hyptonized him; he became immediately quiet and entirely relieved of his discomfort.

Case 7. March 18th. Master G. — age ten. Very sensitive and uncomfortable. Hypnotized, first degree, very light. Quieted him a good deal and made it possible to do a little, but my success was indifferent, largely due, I think, to lack of interest on the patient's part, whose mother had little faith or interest in it. I hypnotized him for three sittings with about the same success.

Case 8. March 30th. Mrs. W. — age forty-three. Filled R. Inf. first molar very sensitive. Patient always very much disturbed by prospect and performance of dental operations. Hypnotized readily to first degree, but full influence maintained but a little time; a drowsy feeling persisted; all dread of operation gone; I used bur and chisel without resistance or suffering on her part. She thought it a complete success.

April 8th. Hypnotized with same success as before. Could

not completely anæsthetize the dentine; added alcoholic vapor and completed the insensibility.

Case 9. April 1st. Mrs. C——, age twenty-nine. Condition, hypnotism and success same as in last case.

Case 10. Miss H——, age forty. Teeth always very sensitive. For twenty years had been troubled with insomnia; very nervous, excitable and apprehensive. Teeth in bad condition, owing to neglect on account of fear of pain.

April 5th. Hypnotized, third degree, somnambulistic, anæsthesia of dentine complete. Operated April 9th, 12th, 21st, and May 7th and 16th. Hypnotized each sitting.

May 28th. I gave a short hypnosis at the beginning of the sitting, and one at the end, operating in the meantime on a post hypnotic anæsthesia which was complete. This method gave relief and comfort; some of the former hypnoses had proved wearisome. The incidental benefits derived from the treatment were very marked. Up to the date of her first sitting she had uniformly taken some hypnotic to afford sleep. The night after her first hypnosis in the afternoon, she slept all night and far into the morning, and every night since, except three or four that she had some face ache. Her general condition is much improved; apprehensiveness much less, and nervousness much reduced, and has much better command of herself.

Case 11. April 11th, 18th, May 16th. Mr. M——, age thirty-two. Teeth very sensitive. Hypnotized third degree; anæsthesia complete. Operated from an hour to an hour and a half at each sitting. At the close of the longer sittings he complained of feeling tired sitting so still; thought an hour long enough.

Case 12. Miss B——, age fourteen. A refined, healthy, vigorous girl, but so afraid of dentistry she had not been able to have teeth even cleansed for two years. Teeth extremely sensitive. Upon my promise that I would not touch her teeth, talked hypnotism to her, interested her, and made an appointment to try it and operate.

May 28th. I hypnotized her, first degree, suggestion removed all fear, and I cleansed her teeth without trouble and prepared and filled with cement two cavities in front teeth.

June 11th. Hypnotized again; prepared and filled with cement four cavities in front teeth. While excavating one of the cavities she flinched some. I feared discouraging her and waked her and

asked if I should go ahead if it did hurt a little ; said, "I don't care; go ahead!" Hypnotized again and finished according to instructions.

June 17th. Hypnotized twice; excavated three cavities and filled with gold; used bur with engine without discomfort.

June 18th. Hypnotized and prepared one tooth, waked the patient and filled; then prepared and filled another molar while awake. The transformation of the patient was wonderful.

Case 13. Miss L——, age forty-two. Called on me in December, 1891, for new upper plate. Had been wearing artificial teeth on rubber for three years. Mouth had been constantly red with serious itching and burning. I made her a good fitting plate on rubber. Her mouth was no better. A few weeks later I made a gold plate, which she has worn since. It gave no relief from the burning and the redness persisted.

June 23, 1892, she called, seeking relief. I proposed hypnotism as an experiment. She was agreeable to it. Hypnotized her to nearly second degree. Suggested cessation of burning and change of color and return to health. Slept perhaps ten minutes. On waking the mouth had changed color perceptibly, burning gone.

June 24th. Had experienced discomfort only about one hour the evening of the 23d, and again this morning about the same length of time. Hypnotized again and suggested for health and comfort.

June 25th. Had experienced a little discomfort once for a short time since yesterday. Mouth still better. Hypnotized for complete recovery. I did not see the patient again until the 29th, four days intervening. Has had hardly any burning of the mouth since last visit until to-day, rather more. Mouth seems much improved in color and texture. Hypnotized for relief and cure.

June 30th. Mouth much better; no discomfort since yesterday. Hypnotized also on July 1st, 6th, 7th, 8th, 14th and 21st. July 22d mouth felt entirely well since June 30th ; is now normal in color save two small patches, which are a little red, but not at all tender or uncomfortable. The patient has worn her plate all of the time.

These cases fairly represent the extremes and average of the results in my practice of the application of hypnotism to dentistry. I believe it is a power of great value to my patients and may be to the patients of other operators who may practice it. I invite the attention and thoughtful consideration of every one present to the subject.

A GLANCE AT FAMILIAR CHARACTERS.*

BY DR. G. H. McCausey, JANESVILLE, WIS.

"From all blindness of heart; from pride, vain-glory, and hypocrisy; from envy, hatred, and malice, and all uncharitableness, Good Lord, deliver us."

A proper treatment of the subject chosen as a basis of this paper, involves a knowledge of human nature; and character becomes familiar to us only, when studied from that standpoint. It is a fact that human nature is very much the same thing the world over, yet it appears with modifications under different circumstances, and when studied in connection with dentists and the practice of the profession, it presents many peculiar phases, so far as a recognition of the ethics of the profession is concerned, as well as its practice.

The patient of average understanding, is not inapt to speak of the office of the dentist as a shop; and, at the same time, classing the dentist with the tradesman, or, at best, with the artisan.

The question at once arises with the intelligent dentist, why does that opinion exist? It is a fact long conceded by the dentist of fair intelligence, that the practice of dentistry if successful, involves the possession of a broad knowledge of many subjects, and each so closely related to the other from its practical significance, that the period has long passed when the practice of dentistry can be considered otherwise than that of a learned profession. That fact being conceded, the question at once arises, why the status of the profession should be wrongly estimated?

The average American citizen is generally disposed to call a thing by its correct name, yet, as it appears, he is at times puzzled to determine what the correct name is. He is, however, not disposed to accept the word of every man as gospel truth regarding any one thing, but, like the physician who diagnoses health or disease by the presence of certain well-defined symptoms, he will judge of the existence of truth in the same way, and if certain symptoms appear, or are entirely absent, he will judge accordingly, irrespective of protests to the contrary. The standard of the profession as a whole will always be found to bear a close relation to the standing of the members, and it is not sufficient that the representative members endeavor to create the impression that den-

*Read before the Wisconsin State Dental Society, July, 1892.

tistry deserves to be classed with the learned professions, for it is as true as that we exist, the general public will estimate the dental profession in accordance with the ethical spirit of its rank and file.

If the dentist shows by his every act that he is willing to class himself as a tradesman, the public will admit the justice of his claim, and give him the benefit of no doubt whatever.

These facts have led the writer to glance hurriedly at certain characters which are familiar to us all, and who are important factors in the creation of public sentiment, regarding the status of the dental profession.

There is one character with whom we occasionally meet, and by far too seldom, who has possibly never perused the code of ethics, yet has definite ideas regarding that which constitutes an act which is dishonorable. He has concluded to commence practice in the same town with ourselves. He calls and notifies us of the fact, at the same time expressing a hope that our relations as competitors may prove mutually agreeable. He shows no suspicion whatever regarding us, but evidently assumes that we recognize for him all the rights which we claim for ourselves.

He commences practice, and after a few days a patient calls and asks our opinion regarding the merits of the new dentist, as exemplified in an operation lately performed by him.

As a matter of principle we decline to criticise the effort of a competitor, and on account of possible lack of time prefer to expend no time in the examination of operations which we are not personally interested in. But we are interested in learning of his ability as an operator, and therefore gladly examine the result of his efforts, and we are pleased to astonish the patient by asserting that the operation is a credit to the operator, and that such an operation would be a credit to any person capable of performing it. The patient expresses astonishment that one dentist should express satisfaction at the result of another's efforts, and at the same time expresses yet greater astonishment when informing us that it was at the doctor's request that she came. But why should she be surprised that one dentist should speak well of the operations of another? The question is not a difficult one to answer. She has heard dentists condemn in unmeasured terms the operations of other dentists; men of reputation and standing, and has, at the same time, heard it insinuated that the fee charged for the same was a most extortionate one.

She has time after time seen the same act committed by one tradesman in the disparagement of the goods of another, and she reasons that the methods being the same, the six of one is equivalent to the half dozen of the other. But our treatment of the case has not in the least injured us. On the contrary we have treated the doctor as we could hope that he would treat us, were the conditions the same, and we have caused the patient to have a higher respect for at least two members of the profession, and that on account of their own acts. But a further acquaintance with our new friend develops the fact that he is an acquisition heartily hoped for but never expected. We find in his every act and word an entire absence of trickery of every name and nature, and although looking carefully after his own interests, is to his friends an open book, and while not thinking of the matter of ethics, he is yet the embodiment of ethics, for his every act is clean.

But we turn from the consideration of this case to that of a very, very much more common one. He was evidently conceived in depravity, born in suspicion, and reared in envy. Surmise, as a trait in his character, is more strongly developed than is his ability as a practitioner. In fact, when he learns that a patient has visited another dentist, he assumes that his competitor is undermining him by a sudden lowering of price, and forgetting that water sooner or later attains to its own level, he sails in for blood and fills a column of the daily Balloon with a list of prices.

A certain element in the community, hailing with delight that which they are pleased to term relief from the "extortions" of others, soon cause him to become aware of the fact that they are not "agin" him, and all goes swimmingly, until on taking account of stock he finds that the aggregate of bills payable greatly exceeds in amount the sum of those receivable. The result is that he works harder than ever, and yet becomes immersed deeper in debt, and charges it all to his competitor who has felt compelled to ignore him, and who yet prospers. Verily, every dog has his day.

He is, however, a grade above another whom all can recognize, and he is the individual who creates misfortune in every town which he chances to infest. He is the one who boasts that his extremely low prices serve to prevent a better and more capable man from becoming his honest competitor. Such a combination of hog and dog-in-the-manger is deserving of the pity of all

decent men, while its effect on a community can easily be imagined.

The next lower grade in the scale is the dentist who, while secretly hating each and every competitor, is yet willing to unite with the majority in the effort to encompass the ruin of the only reputable one among them all. In such a case he proves, beyond the shadow of a doubt, his ability as an expert in the use of innuendo, while according for his victim liberal praise of the left-handed variety.

If the prospects are fair for escaping detection, he is not averse to conspiracy in the direction of placing his victim in a false position before a community, and in the effort to do so generally proves himself to be a "slick" one. He occupies a niche in altitude yet several degrees above another yet to be described.

In order to do him justice, the historian should be a confirmed dyspeptic and hypochondriac, with jaundice thrown in.

That prince of character delineators, Charles Dickens, must have thought of him at least twice, for he is a hybrid, partaking of all the characteristics of both Pecksniff and Uriah Heep.

He is not a man of very great professional ability; in fact, it is not with him a matter of very great necessity. He is, however, "genial," and with him geniality is one of his drawing cards.

He is generally invested with a stereotyped smile which is in the highest degree seraphic, and were it possible for that smile to be made steel pointed, it is upon that point that he would impale his victim. The distance from the roots of the hair of his forehead, to the extreme point of his chin, is generally less than the width of his face at the level of his eyes, and his inferior maxilla generally projects outwardly beyond the intermaxillary bones of the superior maxilla, while the labial surface of the incisor teeth are generally worn flat from impingement of the lower ones, in producing the seraphic smile. That smile is a "corker," and is most effective when produced on the street, and employed by its proprietor in buttonholing a prospective patient, with a view of securing a "job." Another of his drawing cards is his disposition to be accommodating, and the general opinion of the community is that he is so. In fact, through that disposition he becomes a sort of dental general jobber, and seldom expresses an opinion of his own in respect to a prospective operation until he has learned what his patient has guessed regarding the matter, and as his

motto is "we study to please," his own opinion and that of his patient are very apt to coincide. At the present time bridges are directly in his line, and he is building them as often as demanded, and the plethora of his patient's bank account will warrant.

It invests him with a quasi authority for inserting his digits into his neighbor's pocket for the purpose of withdrawing recompense for bridges constructed without the slightest regard to practicability or future usefulness. For the purpose of flattering a matron of mature age, he will, after a mild protest, furnish her with a plate with teeth suitable for a blonde of sixteen. And all of this time he is very "pious." In fact, one of his great specialties is that of impressing that fact upon the public; whether he is greatly devoted to the principles of Christianity or not is an open question, but he is very "pious." As a matter of fact, he will without much questioning admit it himself, and many little acts of his warrant the supposition that he is willing that it should be kept before the public and not forgotten.

He is an expert in working the pious dodge for practice, and should a competitor prove short-sighted enough to refer a patient to him, it does not require a long time for him to conclude that he has made a great mistake in the supposition that he had referred the patient to a gentleman, for the patient is scarcely comfortably seated in the chair before he commences the act commonly termed in ordinary parlance, ripping up the back of his benefactor. His competitor is apt to be a dissipated individual, and while expressing great sorrow for his wife and family, he himself purchases whisky by the gallon for his own use, and haggles with the dealer regarding both price and quality. His knowledge of anatomy being limited, he is continually compelled to be feeling for his competitor's fifth rib, in order that he may not forget its location. Our man is vastly more brilliant than the average man, and more than usually sly. He is as deep as a well, yet the well always has a lighted candle at the bottom, but he is not capable of detecting it. He at times submits to his competitor for consideration some deep-laid scheme which is generally of that transparent texture that he suddenly finds himself "sat down upon" by his intended victim, with the result that he is deeply "grieved," "cut to the heart," with a few other trimmings of pious rot.

He is an adept at working what is known as the church

"racket," and he aspires to positions of prominence in church work.

During the cold weather he is never absent from the church parlors on those occasions when the solitary oyster is given a formal introduction to the barrel of water, and having been submitted for a proper length of time to the action of caloric, is utilized in working the \$5-a-week clerk and his girl for the coin of the realm. At such times he generally receives the cash, and beams on every one who pays for the pleasure of having partaken of the alleged soup, and it is then that his geniality shines resplendent. He is apt to aspire to the position of deacon, yet he will accept the position of professor of elementary theology in the Sunday school.

In other words he will consent to hold down the chair of the Superintendent. That he has never been a student of theology in any respect has no significance; he makes an admirable figure-head, and he secures the full benefit of the advertisement by being seldom absent. He is seldom present at the 10:30 service, and his continued absence is the occasion for much solicitude on the part of the saints, but after the six days' application he confesses that he needs an unabridged rest on Sunday morning. Yet people who are more disposed to attend to the affairs of others, than to look after their own, are unkind enough to say that he is at his office and engaged in filling teeth, and up to the time for Sunday school to be in session. Of course they lie about him, and in that respect he is peculiarly unfortunate, yet the saints are and always have been the subjects of persecution. His field days are when he attends the revival and experience meetings of "our" church, or those of any other for that matter. They are both good mediums for advertisement, and he makes the most of it, but is at times liable to create an impression which is generally held to be incorrect. As an instance, the Creator is supposed to be omnipresent, yet our subject when addressing the throne of Grace, utilized power of lung, limited only by lack of endurance of the vocal chords, and thereby creating the impression that the Creator is either a long distance away or that the telephone is out of order.

At any rate, he sees well to it that each individual present hears him; and credulous old ladies have been heard to say, "what a good man is our Dr. Blowhard." In the experience meeting he finds a red letter chance for posing as one superlatively "umblé."

Whenever he can succeed in securing the pious ear of the public, he takes occasion to say that although a church member of many years' standing, he now knows that he has never before "enjoyed" religion. After speaking in that strain for a time he winds up with an aggregation of self-criminations, but it is a noticeable fact that while thus exploiting himself as a "tough," he neglects to be specific. Whether such neglect is born of fear of arrest, or fear of the difficulty attendant upon the securing of bail, is as yet an open question. However, he is both pious and "umble," and he don't care who knows it. He, like the canine, is granted his twenty-four hours in fee simple. Another character infests our dental societies, and he is a sort of fair-weather individual. He is at times afflicted with a sort of professional neurasthenia, and spinal osteo-malacia. When his affairs progress swimmingly, and nothing occurs to mar his serenity, he is a fair member of his society, but when a vile quack invades his little kingdom, and unfurls his advertising union jack, our friend begins to wilt. He soon commences to look upon our code of ethics as a fair-weather document, pure and simple, and wonders how he is to exist in the future, unless he lowers himself to the extreme level of the quack, and it needs but little consideration of the subject, before he concludes that his only hope lies in self-abasement. His integument has by this time become thicker than usual, yet he has a suggestion of shame and self-respect left, and he therefore saves the society, much shame and mortification, by withdrawing.

He is even then somewhat at sea in determining how to commence his advertising operations, for touch the subject as he may, he always finds it sticky. He knows full well that the intelligent portion of the community is thoroughly posted regarding the word cheap, when applied to dentistry. But he is "in for it," and must do something. He has shown a certain grade of consistency in his withdrawal from the society, and a still higher grade in burning the bridge behind him. After a period of mental hardship he discards the word cheap, and substitutes the term "moderate," and which bears about the same relation to the word cheap that the word hades does to the sheol of the new revision.

The next issue of the weekly *Trombone* contains a choice literary production headed "Moderate Prices." He has started out to overshadow his opponent and, figuratively speaking, he seeks gore. A perusal shows an expertness hardly credible in one so little

experienced in the art of advertising. We find that he has advertised transversely, longitudinally, circularly and octagonally, and in fact he has missed no device, and it is the chemically pure quill of advertisement. He has resorted to the devices employed in selling codfish and molasses, but does the community have a higher respect for his profession than he does himself? His quack nightmare soon eliminates himself from the community, having found his level, and our nervous friend is again in possession of the field, but has thrown to the winds his professional status, lowered himself to the level of a quack, and surrendered his membership in his society perhaps never again to regain it. *Requiescat in pace* thou lost one, and when meeting thy former professional brethren, remember that they have measured the diameter of thy caliber.

PROCEEDINGS OF SOCIETIES.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The ninth annual meeting of the National Association of Dental Faculties was held at the Cataract House, Niagara Falls, commencing Monday, August 1, 1892.

Twenty-six colleges were represented, as follows:

Baltimore College of Dental Surgery—R. B. Winder.

Boston Dental College—J. A. Follett.

Chicago College of Dental Surgery—Truman W. Brophy.

Harvard University, Dental Department—Thomas Fillebrown.

Kansas City Dental College—J. D. Patterson.

Missouri Dental College, Dental Department of Washington University—W. H. Eames.

New York College of Dentistry—Frank Abbott.

Ohio College of Dental Surgery—H. A. Smith.

Pennsylvania College of Dental Surgery—C. N. Peirce.

Philadelphia Dental College—J. E. Garretson.

University of Iowa, Dental Department—A. O. Hunt.

University of Michigan, Dental Department—J. Taft.

University of Pennsylvania, Dental Department—James Truman.

Vanderbilt University, Dental Department—W. H. Morgan.

Northwestern College of Dental Surgery—B. J. Roberts.

Louisville College of Dentistry—Francis Peabody.

Indiana Dental College—J. E. Cravens.

Northwestern University Dental School—E. D. Swain.

Dental Department of Southern Medical College—William Crenshaw.

Dental Department of University of Tennessee—J. P. Gray.

School of Dentistry of Meharry Medical Department of Central Tennessee College—G. W. Hubbard.

University of Maryland, Dental Department—John C. Uhler.

Columbian University, Dental Department—H. C. Thompson.

Royal College of Dental Surgeons of Ontario—J. Branston Willmott.

American College of Dental Surgery—John S. Marshall.

University of Denver, Dental Department—George J. Hartung.

The *ad interim* committee reported that it had investigated a charge preferred against the University of Maryland, Dental Department, by the College of Dentistry of the University of California, of graduating a person in less time than the rules demanded; that it found that no rule of the association had been violated, and had so reported to the parties in interest; that it had dismissed an effort for the reinstatement of the American College of Dental Surgery, Chicago, as not within the jurisdiction of the committee, with the advice to reorganize the college before attempting to influence the association to change its action, which reorganization has since been accomplished.

The committee also stated that its value in settling such matters had been made so clearly apparent that it recommended that it should be made a standing committee, to be elected by the association, instead of being appointed by the President.

The report was received and placed on file, and the recommendation with regard to the status of the committee was adopted.

The following resolutions, laid over from last year, were adopted :

Resolved, That in case of charges against any college no final action shall be taken until all parties concerned shall have at least thirty days' notice.

Resolved, That at all future meetings of the National Association of Dental Faculties the delegates shall consist of members of faculties, and demonstrators will not be received.

The following resolutions, also over from last year, were laid on the table :

Resolved, That after June, 1893, the yearly course of study shall be not less than seven months, two months of which may be attendance upon clinical instruction in the infirmary of the school, now known as intermediate or infirmary courses.

Resolved, That after the session of 1892-93, four years in the study of dentistry be required before graduation.

The following resolutions lie over under the rules :

Offered by Dr. Winder :

Resolved, That hereafter graduates of pharmacy be placed on the same footing as graduates of medicine, and be entitled to enter the second year or junior class, subject to the examination requirements of each college.

Offered by the executive committee :

Any college failing to have a representative present for two successive sessions without satisfactory explanation shall be dropped from the roll of membership of this association.

The chair, having been asked for a ruling upon the admission of graduates of pharmacy to the junior class, decided that under the rules they could only be admitted to the first-year or freshman class.

The executive committee offered a report recommending the restoration of the American College of Dental Surgery to full membership, which, after an explanation by Dr. Marshall of the reorganization of the college, was unanimously adopted.

The executive committee reported on the application of the Western Dental College, of Kansas City, recommending that it lie over for another year. The report was adopted.

The report of the executive committee recommending the rejection of the application of the Tennessee Medical College, Dental Department, of Knoxville, Tenn., for irregularities in conferring the degree of D. D. S. and in the reception of students, was adopted.

The application of Howard University, Dental Department, Washington, D. C., was laid over for another year.

The following applications for membership, also reported by the executive committee, lie over under the rules:

United States Dental College, Chicago.

Homœopathic Hospital College, Dental Department, Cleveland.

Detroit College of Medicine, Department of Dental Surgery.

The report of the executive committee recommending that the Baltimore College of Dental Surgery be censured by the association for conferring the degree of Doctor of Dental Surgery upon Charles

F. Forsham, M. A., LL. D., of Bradford, England, *in absentia*, and honorarily, in violation of the rules of the Association, was adopted.

Dr. Truman offered an amendment to the rule regarding the conferring of the degree of Doctor of Dental Surgery honorarily, absolutely prohibiting the exercise of that privilege to the members of the Association, but the amendment was lost, after discussion, it being the general sense that the present rule is a sufficient safeguard against the unworthy bestowal of the honor.

Dr. Cravens offered the following amendment to the constitution, which goes over under the rules:

Amend Article VII. so that it shall read as follows:

ART. VII. Any reputable dental college, located in any State of the United States, may be represented in this body upon submitting to the Executive Committee satisfactory credentials, signing the constitution, conforming to the rules and regulations of this body, and paying such assessments as may be made.

The Association adopted a protest against the classification of dentists as manufacturers, as provided in House Bill No. 7,696, known as the Willcox Bill, and against the collection of statistics from dentists under its provisions, on the grounds that dentists are not manufacturers in any sense, not being engaged in the manufacture, fabrication, or sale of any product having a merchandisable value; that all the laws heretofore passed in the various States and Territories and the District of Columbia distinctly recognize dentists as professional men; and that the attempt to collect statistics would be an injustice not only to them but to their patients, and that such statistics if collected would be valueless to the government because showing the products of a class of men not engaged in manufactures.

The following, offered by Dr. Winder, was also adopted:

Resolved, That the National Association of Dental Faculties recommends that their alumni write and demand of the Census Bureau of the United States the return of all statistical reports, as, under the recent agreement between the dental profession and said bureau, lawyers, physicians and dentists are exempted from making statistical reports for the census of 1890; and that a copy of this resolution be forwarded to the chief of the Census Bureau.

A communication from the Post-Graduate Dental Association of the United States, suggesting the establishment by the colleges of short courses of training and teaching especially designed and arranged for practitioners, was received and referred to the Executive Committee.

The manuscript of a Compend of Materia Medica and Pharmacy for Dental Students, by Dr. E. L. Clifford, of Chicago, was referred to the committee on text-books, with power to act.

Dr. Marshall offered the following resolution, which was adopted:

Resolved, That the secretary be instructed to notify the National Association of Dental Examiners that the National Association of Dental Faculties considers it out of its province to legislate upon the relative values of the L. D. S. and D. D. S. degrees.

The following were elected officers for the ensuing year: J. D. Patterson, Kansas City, President; H. A. Smith, Cincinnati, Vice President; J. E. Cravens, Indianapolis, Secretary; H. A. Smith, Cincinnati, Treasurer; F. Abbott, of New York, J. Taft, of Cincinnati, and A. O. Hunt, of Iowa City, Executive Committee; James Truman, of Philadelphia, Frank Abbott, of New York, and Thomas Fillebrown, of Boston, *ad interim* Committee.

The President appointed as the Committee on Schools, Drs. J. A. Follett, Boston; S. H. Guilford, Philadelphia; E. D. Swain, Chicago; C. N. Peirce, Philadelphia; T. W. Brophy, Chicago.

Adjourned to meet at the call of the Executive Committee.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The eleventh annual meeting of the National Association of Dental Examiners was held at Niagara Falls, commencing Monday, August 1, 1892.

The sessions were presided over by the Vice President, Dr. Magill, the elected President, Dr. L. D. Shepard, of Boston, explaining his resignation from the State Board of Massachusetts, which necessarily carried with it his resignation of the presidency of the association. The resignation was accepted with regret, and Dr. Shepard was unanimously accorded the privileges of the floor.

The following State boards were represented at the sessions:

Colorado.—George J. Hartung.

Georgia.—D. D. Atkinson.

Iowa.—J. T. Abbott, J. B. Monfort.

Indiana.—S. T. Kirk.

Maryland.—T. S. Waters.

Minnesota.—L. W. Lyon.

Massachusetts.—E. V. McLeod.

New Jersey.—Fred A. Levy.

Ohio.—Grant Molyneaux, Grant Mitchell.

Pennsylvania.—W. E. Magill, Louis Jack, J. A. Libbey.

Tennessee.—J. Y. Crawford.

Wisconsin.—Edgar Palmer.

Kansas.—A. H. Thompson.

The following boards were admitted to membership :

Virginia.—J. Hall Moore.

North Carolina.—V. E. Turner.

Oklahoma.—D. A. Peoples.

South Dakota.—C. W. Stutenroth.

District of Columbia.—Williams Donnally.

At the instance of the committee on colleges, the following communication was sent to the National Association of Dental Faculties :

NIAGARA FALLS, Aug. 1, 1892.

To the National Association of Dental Faculties:

GENTLEMEN—Whereas, a very considerable abuse has arisen by the improper use by students of the various certificates of the schools, such as the "standing" and "passing" certificates, to support students and graduates under age in their attempt to illegally engage in practice; we therefore ask your association to request the various colleges to have their "standing" and "passing" certificates of such uniformity of terms in each case that they can be used for no other purpose, and that they be printed in few words and small type, and be signed only by the dean.

Respectfully,

NATIONAL ASSOCIATION OF DENTAL EXAMINERS,

FRED A. LEVY, *Secretary*.

A committee of conference was appointed, consisting of Drs. Truman, Marshall and Swain, on the part of the Faculties Association, and Donnally, Palmer and Monfort, on the part of the Examiners' Association, which after consultation agreed upon a favorable report.

Dr. Lyon offered the resignation of the Minnesota board, which was laid upon the table, as it had evidently been offered as the result of a misunderstanding, and the board was requested to withdraw it.

The following resolution, offered by Dr. Crawford, was adopted :

Resolved, That when a member of any State board becomes a teacher of a dental school, his resignation from his board should follow.

A resolution protesting against the classification of dentists as manufacturers and the collection of census statistics from them under the provisions of House Bill No. 7,696, commonly known as the Willcox bill, was adopted. The resolution was similar in terms to those adopted by other dental societies.

The committee on colleges reported that they had received reports showing that the actual number of students in attendance at the last sessions in the schools recognized by the Examiners Association was 2,881; of graduates, 1,357. In the schools not recognized by the association the students were 236; graduates, 96.

The report also considered desirable advances to be made in educational methods, and offered the following memorial, which the Secretary was directed to transmit to the National Association of Dental Faculties:

The National Association of Dental Examiners would respectfully memorialize the National Association of Dental Faculties to authorize two advances in the system of dental education.

These are: First, that your association require the universal enforcement of a higher grade of preliminary education of candidates for matriculation. This proposition lies at the foundation of dental education, in which is involved the quality of the graduates of the future, upon which depend the advancement, the standing, and the dignity of the dental profession.

The second proposition is that complete preparation be made in each school for laboratory technique in the study of histology, pathology, and in each of the departments of dental surgery and dental prosthesis, and that this method of teaching be made a requirement of the schools.

The committee also reported the following amended list of colleges which they recommend as reputable:

- American College of Dental Surgery, Chicago, Ill.
- Baltimore College of Dental Surgery, Baltimore, Md.
- Boston Dental College, Boston, Mass.
- Chicago College of Dental Surgery, Chicago, Ill.
- College of Dentistry, Department of Medicine, University of Minnesota, Minneapolis, Minn.
- Dental Department, Columbian University, Washington, D. C.
- Dental Department, National University, Washington, D. C.
- Northwestern University Dental School. Formerly Dental Department of Northwestern University [University Dental College].
- Dental Department of Southern Medical College, Atlanta, Ga.
- Dental Department of University of Tennessee, Nashville, Tenn.
- Harvard University, Dental Department, Cambridge, Mass.
- Indiana Dental College, Indianapolis, Ind.
- Kansas City Dental College, Kansas City, Mo.
- Louisville College of Dentistry, Louisville, Ky.

Missouri Dental College, St. Louis, Mo.

New York College of Dentistry, New York City.

Northwestern College of Dental Surgery, Chicago, Ill.

Ohio College of Dental Surgery, Cincinnati, Ohio.

Pennsylvania College of Dental Surgery, Philadelphia, Pa.

Philadelphia Dental College, Philadelphia, Pa.

School of Dentistry of Meharry Medical Department of Central Tennessee College, Nashville, Tenn.

University of California, Dental Department, San Francisco, Cal.

University of Iowa, Dental Department, Iowa City, Ia.

University of Maryland, Dental Department, Baltimore, Md.

University of Michigan, Dental Department, Ann Arbor, Mich.

University of Pennsylvania, Dental Department, Philadelphia, Pa.

Vanderbilt University, Dental Department, Nashville, Tenn.

Western Dental College, Kansas City, Mo.

Minnesota Hospital College, Dental Department, Minneapolis, Minn.
(defunct.)

St. Paul Medical College, Dental Department, St. Paul, Minn. (defunct.)

The report was adopted.

The following officers were elected for the ensuing year: W. E. Magill, Erie, Pa., President; J. Y. Crawford, Nashville, Tenn., Vice President; Fred A. Levy, Orange, N. J., Secretary and Treasurer.

Adjourned.

CHICAGO DENTAL SOCIETY.

Discussion on June 7, 1892, of the essays read at the meeting May 3, 1892, entitled "Facial Neuralgia" and "Pulpitis and Pulp Capping."

DR. THOS. L. GILMER: Mr. President, Ladies and Gentlemen: The paper has pretty thoroughly gone over the subject of pulpitis or inflammation of the pulp as well as pulp capping, and I do not know that I can add much to it. Perhaps my treatment may be somewhat different from that of the essayist. It is often very difficult to differentiate between hyperæmic and inflamed pulps, and I think many so-called inflamed pulps are simply hyperæmic, and it is these latter that we are the most successful in treating. If pulps are much inflamed, I do not believe, owing to their histological make-up, that they are often saved. The pulp is devoid of lymphatics, which of course makes it more difficult to treat, the veins alone being depended upon to carry off the products of inflammation. These veins have very thin walls, simply a covering of a

single layer of cells, lying end to end and side to side, so thin and so frail that in hyperæmic conditions they are very liable to break down, the blood being poured out between the cells in the body of the pulp. It is possible perhaps that we may have extravasation and then have the pulp restored to health, the blood that has been poured out may be taken up and carried off, but in my opinion after it has gone to that extent, a restoration to health is doubtful.

The vaso-motor nerves which control the caliber of the blood-vessels of the pulp, seem to be more easily paralyzed than do the vaso-motor fibers in other parts of the body. It is certain at least that they become easily paralysed when in a hyperæmic condition, and drop their grasp on the vessels, allowing the blood to be forced in, and then not having sufficient power to send it on, it remains there and we have a congested state. Some years ago I made a number of investigations to see the conditions of hyperæmic and inflamed pulps. When I found a tooth that was giving a good deal of pain, and which it was necessary to extract, I would immediately drop the tooth into Miller's fluid, and by that means capture the conditions. I would get a natural injection, the vessels of the pulp would be filled with blood cells and harden *in situ*. After they had remained in the fluid some time I cracked the teeth and removed their pulps, putting them in gum arabic, then making sections of them, and upon microscopical examination many pulps which I had supposed to be inflamed proved to be only hyperæmic, and I said a moment ago I believe in a majority of cases of exposed aching pulps, in the treatment of which we are successful, the condition is hyperæmic and not inflamed.

Causes were mentioned which produce pulpitis, but there is one cause not mentioned which I think is worth while to take into consideration, and that is the use of burs and sandpaper discs on fillings. A hyperæmic condition is only a short step to an inflammation and is a very dangerous condition for the pulp; it is easily excited by the too rapid or too long continued use of sandpaper discs and finishing burs. Therefore, as a rule, I lubricate my sandpaper and burs in polishing fillings and do not hold them on too long. I also lubricate my strips and do not pull them through in polishing to their full length, but work them backward and forward slowly. It takes longer but it is certainly not nearly so dangerous to use them in this way.

In case of a pulp exposed to the oral fluids it is certain, if it

remains long under such unnatural conditions, that it will become inflamed.

In treating a tooth recently filled having a hyperæmic pulp, it is desirable to protect it from thermal changes thereby giving it rest; this may be done by covering it with gutta-percha, or some other nonconducting material. The oxyphosphates have been used for this purpose, but as they are not good nonconductors I would not recommend them. Counter-irritation is one of the best methods of treatment for hyperæmic or inflamed pulps. It matters not so very much how we get it, whether it be by mustard or capsicum plasters, or by dipping a piece of metal in hot water and placing it on the gum, or whether it be by the application of chloroform, capsicum and aconite. My treatment of inflamed exposed pulps is to remove the debris and render the cavity aseptic and protect it from outside influences. It is better, if possible, and it usually is possible, to apply the rubber dam. Should not like to use peroxide of hydrogen; would not use it unless there had been a formation of pus in the pulp, in which case should not expect to save it. My objections to peroxide of hydrogen are that it is an irritant and an acid. Should I use it, would dilute and neutralize it. Other material will answer as well, for instance the water of oil of cassia. Do not think I should cover the pulp with oxyphosphate as was directed by the essayist, but use some of the gutta-percha preparations. Should use on an inflamed pulp just that which many of you will condemn. I continue in its use simply because I have employed it for twenty years with better results than with any other material I have tried.

I commenced capping pulps about 1872. Have a pulp in my mouth which was capped in 1872 by a fellow-student at college, and another capped later, both were capped in a similar manner. I commenced the use of oxychloride of zinc for capping pulps a good many years ago and have been more successful with it than any other material. In capping I first coagulate the surface of the pulp by applying carbolic acid 95 per cent, this forms an eschar and puts the pulp to sleep for a time. I leave a sufficient quantity of carbolic acid in the cavity to be easily seen. I mix oxychloride of zinc so that it will flow nicely, previous to that having prepared a little piece of paper about the size of the cavity, on which I place the oxychloride of zinc, carry it into the cavity and tap gently to convey it to place and allow it to harden. Of course some pulps

die under this treatment, not necessarily because of the treatment, but in some cases at least owing to the impossibility of determining what pathological conditions are present. We must be very careful in the selection of patients for whom we cap pulps. We must not cap pulps for anæmic persons, or those who are malarious, but for ordinary robust persons where the pulp has not suppurated, I have no hesitation in capping them.

I have here a toothbrush I wish to show you. It bears the name of Dr. Mintzer. It is of French manufacture. Two years ago I found a brush of excellent quality and shape but too large, and the bristles were too thickly set. I cut out every other row of bristles and considerably decreased its size and sent it as a sample to the manufacturer, and this is the result returned to me.

DR. P. J. KESTER: Dr. Harlan has given a few unique or unusual causes of neuralgia. The protrusion of root fillings being one, we may have the same results from fillings that do not protude, in fact did not completely fill the roots, or when the material was of such a kind as to absorb gases which produce irritation enough to give a neuralgic response. I had a case a few days ago where there was a persistent neuralgia the cause of which was obscure, but we finally found a tooth that was just slightly tender under pressure, the filling was removed and the root found filled with cotton. Any other material which does not hermetically seal the root may produce the same disturbance.

The subject of neuralgia from peripheral irritation seems to me to be the subject; in fact, that is about the only kind of neuralgia that we have to deal with, where the periphery of the nerve is irritated. Dr. Harlan has given a few unique or remote causes or strange causes, causes that have not been spoken of. He speaks of the protrusion of a filling. We have all of us had more or less experience in the irritation which is just enough to produce a neuralgic response and not enough to produce abscess. I have found the same result from fillings that did not protrude. I remember a case which I had to deal with quite recently, where we had to hunt for the pain, and we finally located it in a tooth that had been filled. The tooth was not sore, possibly just slightly tender, but not sore in the strict sense of the word. I removed the filling and I removed the filling in the root which I found to be cotton. I said to the lady that she evidently had her tooth filled in the east where they taught the filling of roots with

cotton. She said no, she had the tooth filled in Tacoma, but that the gentleman was a graduate of an eastern college. There was just enough irritation produced by the absorption of the gas in this cotton to produce the neuralgia, and I have had several cases of this kind where the roots have been imperfectly filled where the irritation was not sufficient to produce any extensive inflammation, and I think that might be classed properly as one of the obscure cases of neuralgia.

Another peculiar condition of things producing neuralgia is the condition of the gums brought about by the recession, or where there is a recession of the gum, which may be brought about by the improper use of what to me is something of a bugbear, that is, the wooden toothpick, which is used about the roots of the teeth producing a slight irritation which will produce neuralgia from that source. I do not see anything in the paper that I may discuss; the doctor has covered the ground on those three peculiar causes and he has said nothing about the treatment of these cases. The treatment of all cases of neuralgia has to be suggested by the causes which have produced them.

DR. C. N. JOHNSON: I do not like to see these subjects go by default; I have not very much to say, but I will start the discussion with the hope that others will follow. I simply want to refer to one phase of the subject treated by Dr. Harlan. He spoke of some of the peculiar causes of facial neuralgia, and I want to mention one cause, which seems to me the most prevalent. In my practice, at least, I have found it the most frequent cause of facial neuralgia when connected with the teeth, and that is a suppurating pulp. This is sometimes a quite difficult affection to diagnose accurately, and it has caused me much annoyance from the fact that the patient can seldom signify exactly where the pain originates. I remember one case in particular, in which pain was referred to a lower second bicuspid, decayed but with a living pulp. The pulp was not exposed, but from the fact that the patient persistently pointed to the second bicuspid as the seat of the trouble, I was induced to expose the pulp and destroy it, but the same symptoms continued after the removal of the pulp; all pain being referred to that single bicuspid. After removing the pulp carefully and cleaning the canal, I knew that that could not be the cause of the pain as explained by the patient. There was a second molar on the same jaw that had been filled with a cement filling some time

before, and on pressing very hot gutta-percha onto that tooth, the patient complained of the same degree of pain that he had experienced while troubled with neuralgia, "but," he said, "it is in this tooth," pointing to the second bicuspid. I removed the cement filling, exposed the pulp and found it suppurating. After this pulp was destroyed there was no more neuralgia. Those cases have been more annoying to me than any other kind on account of the difficulty of diagnosing, and whenever I find neuralgia referred to any particular tooth, if I cannot locate it in that tooth myself, I examine the teeth in that region, or in any other region of the mouth, and especially any large filling, and if I can get that pain reproduced by hot gutta-percha pressed upon the tooth I generally drill into the filling and investigate. In the majority of cases of that kind I find that the neuralgia has been caused by a suppurating pulp.

We may have a suppurating pulp that is not a dead pulp. In fact we often find a suppurating pulp in an extremely sensitive condition.

DR. H. A. COSTNER: I did not have the pleasure of listening to the paper, but I wish to narrate a case in point. A lady had been suffering for two or three weeks with neuralgia which she located in the right inferior maxillary in the region of the molars. She had not had a tooth on that side of the mouth back of the bicuspid for thirty or forty years. She went into the hands of a physician, as a great many people do for such ailments, and he treated her for three or four weeks; she suffered great agony, with but little relief, until I, being a friend of the family, heard of her trouble. I had previously filled and destroyed the nerves in two molars on the left side; this was on the right side. The physician had induced her to believe that the trouble came from the molars on the left side, in which the nerves had been destroyed, and she was on the point of having them extracted. But I found at once, upon examining her mouth that all her trouble came from a nerve in a superior canine tooth on the right side that had died under the filling that had been there for years, and it was in a state of decomposition, and upon removing the filling and boring into the tooth she received instant relief. In speaking of neuralgia of the teeth I find that it will not do to pay very much attention to what patients say in regard to locating the pain, as it is impossible for them to do so. It seems that there is such a close relation between

the superior and lateral branches of the dental nerve that they cannot locate whether it is above or below, and so a man must know his business in order to locate a neuralgic tooth.

DR. D. M. CATTELL: I should like to remind the gentleman who asked the question about suppurating pulps, that there is quite a difference between suppuration and putrefaction. A pulp putrescing is certainly very dead, but a pulp may suppurate, or suppuration may commence upon some part of the surface, or one of the horns may be suppurative, and the rest of the pulp may be very much alive. That is a point that I feel a little touchy upon—the terms that we use. I think if we carefully studied these technical terms we would not be led into error so often. With a great many of us it has only been a few years since we knew the difference between suppuration and putrefaction. Where putrefaction of the pulp has taken place, the resulting gases forming within the chamber and heat coming in contact with the tooth distending the body of the gas, would certainly produce pressure upon the living tissue just beyond the foramen and give intense pain. In regard to neuralgia I remember an incident that happened several years ago where I filled the canals of a lower first molar. A year or two afterward the patient returned with intense pain in that particular tooth; I felt chagrined. She had been under a physician's care for several days who dosed her heavily with quinine. The only way the pain could be kept anywhere within comfort was by giving very large doses of quinine. I removed the filling, removed the contents of the canals, found everything clean and sweet, no pain that I could produce by percussion or probing until I got clear through the apex of the roots, and that only as one would from pricking healthy tissue. I was sure that tooth was not the seat of the trouble. Then I made a careful examination between the teeth to see if I could not find exposure, wedging successively; getting between the lower teeth on that side, I failed to find anything the matter. Then I commenced on the same side above, and finally found a small mesial opening and an exposure of the pulp of the wisdom tooth. The moment the pulp was touched it located the seat of the pain, and it was the first time it had been located by either the patient or myself since the neuralgia had commenced some two weeks previous. Upon opening it up and treating the pain ceased. That was my first practical knowledge of the fact that the feeling of pain to the patient

might be very distant from the point of lesion at which the pain really existed.

I heard very little of the paper on pulpitis and pulp capping, etc., but as the subject is before us, I would like to call your attention to an article in the last *Ohio Dental Journal*, from the pen of one of our eminent men in the east, in regard to pulp capping. The subject is the pulp nodule, he claiming that it is not wise to cap a pulp, that one of two conditions must surely arise, the pulp either immediately dies under the cap, or else pulp nodules are formed and that this is especially true in the teeth of the young, if the pulp has ever bled. It was quite a surprise to me that any one to-day could advance such a doctrine, as I certainly think that pulp capping is a very good thing to do.

DR. DON M. GALLIE: I have a case that I would like to relate in regard to facial neuralgia. A gentleman who is in the same office building with me came to me last week suffering severe pain in his face. He located the pain in the second right bicuspid; said he had been troubled with this at intervals for about six years. All the molars on that side had been extracted, and at intervals of a few months pain always returned. He came and asked me to extract the tooth the other day. I treated it and told him I would like him to wait awhile and see if I could not remedy it. After coming two or three times he told me that he had received a blow on his right superior central incisor when a boy, and once in awhile pus would ooze out from under the gums. After telling me this I opened into the central incisor and found that the pulp was putrefied and there was a good deal of pus present. He was in again to-day and said that although the tooth felt a little sore he was not suffering the severe pain he had been for the last six years. I concluded that the central incisor was the cause of all the trouble and am heating it, hoping to effect a permanent cure. This patient has had the upper molars on the right side, and the bicuspids on the left extracted for this same trouble. He has never had any teeth filled.

DR. TRUMAN W. BROPHY: I was not present when the paper on neuralgia was read, but while listening to the remarks of those who have spoken since I came, I am reminded of two or three cases of odontalgia, in which nearly all the pain was neuralgic in its character, and this often leads to errors in diagnosis. One case was that of a lady of about thirty-five years of age, who had been

suffering very severely during a period of three weeks. A gentleman was treating her who was a very conscientious young dentist; he had made examinations repeatedly and failed to discover an exposed pulp or any apparent cause of the trouble within the mouth, and then with the assistance of a medical man, he administered morphia with a view to correcting the trouble, and alleviating the pain. Of course this stopped the pain, but it was only temporary. By and by he concluded that there must be pulp nodules in some of the teeth, and after opening the second superior bicuspid on the left side and treating it, the pain did not lessen, and he finally extracted the tooth. He kept on treating the patient but the pain did not disappear. Apparently it was not located in the upper jaw but below. Then he came to the conclusion that it would be well to open the second and third lower molars on the same side, concluding that pulp nodules were forming, but before that was done the patient was directed to me by him, and upon careful examination of the distal surface of the first bicuspid, which was in contact with the one he extracted, I found a cavity in the tooth beneath the gums and an exposed pulp. Of course applications for excluding the air and alleviating the pain in the exposed pulp cured that case of neuralgia.

Another case of facial neuralgia which I remember was just the reverse of this. The pain seemed to be located in the upper jaw and the patient was treated quite a long time. Certain teeth that had pretty good sized cavities were filled, after first putting in some gutta-percha, or some substitute, but the neuralgia did not disappear. The patient was a young man. I found a cavity in the lingual surface of the second molar, a place where cavities do not frequently form, and this cavity had extended in so as to expose the pulp. The application of suitable agents to alleviate the pain cured that case of neuralgia, and this shows us that we should be exceedingly careful in making a diagnosis; there is no surface of the tooth that is absolutely exempt from the ravages of decay and it becomes our duty to examine all those surfaces. How frequently it occurs that we do not make careful examinations of the lingual surface of the lower molar and bicuspid teeth, simply for the reason that cavities do not occur frequently in those locations.

The different causes of neuralgia is a subject that might be discussed at great length. The different causes of neuralgia of the dental branches of the fifth pair of nerves are so numerous I

will not attempt to go into a discussion of the subject further than to call attention to one form in the absence of all the teeth, that is a neuralgia which comes from an hypertrophy of the inferior dental nerve in aged people as it makes its exit through the dental foramen. It is a most common origin of neuralgia and, as in other cases, the neuralgia is not often located at its real seat but may be located some distance from the point of irritation. The remedy is simple; it is to make a saddle-shaped plate so that pressure will not be exerted upon the nerve as it passes out of the foramen to be distributed to the teeth and gums and parts adjacent.

DR. ROLLIN B. TULLER: I shall not undertake to discuss the paper but I wish to relate an incident that occurred in my practice about fifteen years ago, when I was in a country town, and which may be of interest in connection with this subject. A farmer drove up to my office, about three miles, and said he had a tooth that was aching, in fact that the whole side of his face was in the most distressing pain. He described the pain as neuralgia shooting up through the side of his head, and located its origin in the first lower molar on the left side. I examined his mouth and found as perfect a set of teeth as I have ever seen. They were fully developed in shape and texture and what I would call almost a typical set. I made as thorough an examination as I possibly could of the tooth indicated and all the other teeth, but could find no defect whatever, nor anything likely to cause such pain and I declined to extract the tooth as he demanded. I passed a lance around it and applied something to the gums that afforded a little relief for the moment, and induced him to go home and see if it would not pass away. He started home and drove out of town for some distance, and came back on the run and said if I didn't take the tooth out he would go across the hall to my competitor. Finally I extracted it and to satisfy him and myself I split it open. I found a calcified pulp, the whole chamber and the roots were filled with a calcific deposit that was detached entirely from the tooth substance. There seemed to be serum all around it but there was no indication of blood nor any of the original conditions of a pulp in the pulp chamber nor down the roots. In the extreme parts of the roots the calcific formation was so thin that it readily crumbled to pieces on the slightest touch. The portion in the pulp chamber was quite dense and hard and conformed exactly to the shape of the chamber. I had occasion a few months afterward to extract the

corresponding tooth, the first lower molar on the right side under similar circumstances, and I found exactly the same conditions. It is difficult to diagnose such cases, and when extraction and splitting or opening discloses these calcified peculiarities, it is difficult to explain why they should suddenly cause such intense pain when months and perhaps years have been consumed in gradually taking on such conditions. My experience has taught me that when a live tooth (if you can locate it) is "acting up" in queer and unaccountable ways, not responding as teeth generally do to certain reliable treatment, to look for pulp nodules or calcific deposit of some sort in the pulp chamber, and I often find it. It is a great satisfaction to roll out a boulder about the size of a millet seed and exclaim, "Ah! I thought so. Here is the cause of all your trouble!" It is so satisfying too, to your patient to know that you have at last found the cause of the trouble after an effort necessarily long and tedious, whether you can make them fully comprehend just why that caused all the pain.

DR. C. F. HARTT: I think Dr. Harlan's paper is a very timely one. I want to say right here that confession is good for the soul. I have filled the roots of teeth with almost everything I could get hold of. I have filled them with copper, I have filled them with wood, I have used lead, tin, gold, almost everything. It got to be a question with me, what can I fill root canals with? Now I think when I am filling a root, how can I get this out again, and I have come to the conclusion that a dentist who fills the root of a tooth with wood or any substance that cannot be gotten out reasonably easy, is doing an injustice to his patient. I would not allow a man to fill the root of a tooth in my mouth with a metal or wooden point; I should want it to be gutta-percha or something that could be readily taken out. I have found teeth that I have filled come back troubling the patient, and I think, when did I fill that tooth? I get my book and look it up and find that the roots were filled; I think to myself, was I well at the time I filled that tooth, was I at my best, I wonder if that root is filled properly. Upon examination I find the roots filled up with wooden or copper points, and I cannot get them out. Dr. Harlan has recommended for a number of years that the roots of teeth should be filled with something that can be removed easily. I believe it is a very bad thing, indeed, to fill the canals with anything that you have to drill out.

DR. A. W. HARLAN: The particular points that I brought forward

in my paper were, unusual cases of facial neuralgia from the protrusion of fillings through the roots of teeth, cases of neuralgia resulting from incomplete sterilization of the dentine of polluted teeth, and cases of neuralgia resulting from exposure of the pulps of the teeth at the apex. Those three phases have not been touched upon either by the gentleman who opened the discussion at the last meeting, or by the speakers of this evening. I need not assure this highly intelligent audience that the three causes I have mentioned will probably cover the vast majority of cases they have to handle where it is impossible for them to diagnose because of the pain, and that those three phases of pain of facial neuralgia are worthy of serious investigation. You cannot do a greater service to a patient under any circumstances than by almost intuitively locating the source of his pain and relieving it.

The case mentioned by Dr. Gallie, where pain was felt in the second bicuspid, coming from a dead pulp in a central incisor, simply goes to show the possibility of the reflex nerves of the anterior dental branch of the superior maxillary branch of the fifth pair of nerves being pressed upon by the accumulation of pus in that region, which was undoubtedly the case, and the pain was felt and located by the patient in the second bicuspid because those nerves have not a tactile sense.

I do not feel ashamed to relate a case in my early practice where unfortunately I caused the loss of two teeth by not realizing the necessity for thorough examination before extracting the teeth. The patient, a man about 40 years old, applied to me for the relief of pain in the first superior molar on the right side. I examined that tooth carefully and found there was no cavity, and that the pulp was not dead. I examined the second molar and it was in the same condition. Thinking that there was something beyond my ken I applied the usual aconite preparation in use at the time and sent him away. He came back in a few hours and said the pain was in that tooth and he must have it out, so I extracted it. He came back the next day and said the pain was in the same locality, but I could not discover anything; the next day he came back and I extracted the second molar, and then I looked his teeth over again but did not discover anything. He came back again and I looked them over again and discovered a cavity on the buccal surface of the third inferior molar on the right side immediately below the gum, that exposed the pulp. I extracted that and it relieved him,

but he lost two sound teeth. So I would emphasize the necessity for a thorough examination of every case before you extract a tooth.

But I want to call your particular attention to the suffering that is caused by the protrusion of root fillings. I know there are some gentlemen present who defend the filling of the roots of teeth with metal points. I simply want to utter a word of caution; it is a dangerous procedure to force wood or metal or any other irritating substance through the roots of the teeth, on account of the danger of future trouble and possible loss of the teeth in consequence. If you have to remove a metal point it is always a matter of great difficulty; if you attempt to remove a piece of wood or whalebone you will find that it is no boy's task, and it is much better to use something like paraffine or shellac dissolved in alcohol, or gutta-percha dissolved in chloroform, or something of that sort, that can be acted upon by agents that you can introduce into the tooth. If it then becomes a necessity to remove it, it is possible for you to relieve the patient and place the tooth in a condition of comfort. The methods of sterilizing poisoned dentine I will not dwell upon, because you must be aware of the necessity for its thorough performance in order to maintain a degree of health of the cementum and pericementum. Any one who is familiar with the microscope, must know that all teeth are not of the same denseness of structure and that wherever there is an area of space and mephitic gas in contact with that, it must be eventually filled, and if the gases are not driven off—and you know that gases are frequently not driven off except by intense heat, they greatly impair the cementum, and impairing the cementum further deteriorates the receding quality of the pericementum, and that becomes a useless tooth and the patient always avoids it. You will find that on the side of the mouth where there is a lame tooth, a tooth with an incomplete filling, the patient invariably chews on the other side, that tooth becomes coated and the jaws drawn; that side of the mouth is unused and is not only a source of pain but also of physical discomfort. Exposure of the pulp by the side of the tooth or at the apex of the root, you are familiar with, and in all cases of that kind the promptest measures must be instituted; either the tooth must be extracted or the pulp destroyed; if you wish to save the tooth you will have to destroy the pulp and fill the root before the patient secures relief.

ASAPROL

Is the name given by Stackler and Dulief, of Paris, to the beta-naphtol-alpha-monosulphonate of calcium, which has the following formula :



It occurs (*Pharm. Zeit.*) in small scales, easily soluble in water, but less freely soluble in alcohol, and is decomposed at 100° C. It is prepared by heating one part of beta-naphtol with two parts of sulphuric acid to 100° C. for two hours, and converting the acid thus obtained into the calcium salt. Physiological experiments have demonstrated its nontoxicity, while it arrests the development of and destroys microorganisms. Since 5 to 15 per cent solutions are required for this purpose, however, its utility as an antiseptic is questionable.—*Am. Druggist*.

MEMORANDA.

Dr. C. L. Goddard is once more enrolled as a member of the Dental Society of California.

Assurances have been received from Russia that representatives of the profession will be with us at the congress in 1893.

CHANGE OF TIME OF MEETING.

The British Dental Association will hold its next meeting in April instead of August, in order to permit members to attend the Dental Congress.

We are assured that the breach has been healed between the State Dental Association of California and the dental school of the university. This is very gratifying to all concerned, and the hope may now be entertained that the American Dental Association can hold a meeting in the Far West at no distant day—say 1895. Chicago looks to California, Nevada, Oregon, Washington, Wyoming, Arizona, Utah and other Western points for a large delegation in 1893. It is none too soon to begin to organize parties for August 15 of next year.

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WINTER EVENINGS.

Very soon the long evenings will be here and the studious dentist will have at his disposal more leisure hours than should be spent wholly in frivolous pastime. Some of our most distinguished scientists have laid the foundation of their influence and popularity by wisely disposing of an hour or two in the evening time. Others prefer the early hours of the morning—this, however, is nearly always a matter of habit, more than of preference. No matter what may be the selfish wishes of the greater number of us, at least a portion of our time should be spent in reading, systematically, on some subject that we are desirous of mastering.

The late Henry Ward Beecher said that he read all of Gibbon's *Rome* in ten minute snatches before breakfast. We know from experience that Bloxam's *Chemistry* was read entirely in fifteen minute sessions during one winter, after dinner. In the same way Frey's *Histology* and Green's *Pathology* was gone over as well as Wagner's greater work.

It would be a good plan for one interested to read Miller's *Work on the Micro-organisms of the Mouth*, Black's *Anatomy of the Human Teeth*, Wood's *Therapeutics* or Smith's *Operative Surgery*, or some general work in its entirety.

If one is disposed to do so a miniature chemical or mechanical laboratory may be fitted up in one's private residence as well as a microscopical work room. Every one is not fitted, nor has he the inclination to do microscopical work, but there are other departments lying fallow for want of attention, and we appeal to the un-

employed to go to work, in some direction from a stern sense of duty to those of our ranks who are doing so much for them—and reciprocate in some slight way the many benefits that they have received already from these unselfish labors. It may be that at first the work will be irksome, but soon you will become interested; then enthusiastic, and later you will be competent to instruct and delight your auditors, whose encouragement will spur you on to perhaps a great discovery for the benefit of mankind.

Do not neglect your opportunities but seize them now.

DOES IT PAY?

In unison with the predominating question of the age, "Does it pay?" we are inclined to raise the query as to whether or not it is profitable for a dentist to follow, month in and out, the routine of office work without permitting himself, at reasonable intervals, the relaxation and recuperation which a judiciously spent vacation affords? Can a man advisedly ignore nature to the extent of digging after the dollars to the exclusion of everything else? Is it justice to himself or his family that he should jeopardize his health and his temper by a blind policy of continuous application? Does it pay?

Dentistry is a trying occupation. It entails upon the individual who follows it faithfully an undue nervous strain, which, if too long continued, results in some kind of collapse. It is confining to the body, and narrowing to the brain. Can a man afford to wrap himself about with habits which partake largely of the monotony of machinery, and do nothing to break that monotony?

How rapidly will a man grow, or how long will he live under such circumstances? And how much enjoyment does he get out of life while he does live? The height and depth of human accomplishments should not be measured solely by the medium of money.

Happiness is the greatest good, and the greatest happiness is attained only through the greatest growth. Can a man grow who limits himself to a horizon bounded by two and thirty teeth? In order to develop, a man must have communication with the world. He must see something, and know by experience a few of the things that happen outside the four walls of his office.

We are prompted to these remarks by the personal knowledge

of men who have been in practice for years, some of them more than a baker's dozen, and who never take a holiday. The question arises: Can these men, honest and worthy as undoubtedly they are, do their patients as good service in the long run as they could if they took advantage of an occasional breathing spell to renew their vigor? Dissolved to its final solution this matter of continued application proves an injustice to all concerned. The patient suffers as well as the practitioner, and the practitioner's family often suffer most of all. A man cannot be all that he should be to his home and friends, if he makes himself a slave to his office.

When dentists claim that they cannot afford to take a vacation they simply prove their own short-sightedness. We are firmly convinced that even in the matter of money a man loses nothing. Look at the men who have accumulated the most money in dentistry, and almost invariably they are men who have taken frequent vacations, men who have traveled extensively, and who have broadened their ideas by intercourse with the world. A man becomes a better financier, as well as a better individual, by extended experience, and the most observant man in the world cannot gain a very extended experience in a dental office alone.

Let us appeal to some of our perpetual pluggers of teeth and ask them to reflect and see if, after all, it pays. C. N. J.

CORRECTIONS.

The leading article by Dr. C. S. Case published in the August number of the DENTAL REVIEW should have been credited to the Iowa State Dental Society, where Dr. Case read the paper at the May meeting.

Unfortunately in the notice given the *Revue Internationale D'Odontologie* a number of the names of the gentlemen connected with that journal, were not corrected in the second proof sheets, and as a result some of our worthy confrères will never forgive us if they thought that we were personally responsible for these errors.

REVIEWS AND ABSTRACTS.

WESTERN BRANCH, BRITISH DENTAL ASSOCIATION.

The annual meeting of the western branch of the British Dental Association, which is held this year in Penzance for the first

time since its formation, opened on Friday morning. The council met at 10 in the Lecture hall, and the general meeting of members followed in the Alverne Hall. The chair was taken by the retiring President, Mr. E. L. Dudley, L. D. S. (Bath), and the members present were Messrs. J. H. Gartrell, Penzance (the President elect); Messrs. E. Brand, Exeter; E. Brown, Barnstaple; F. H. Colwill, Ilfracombe, E. R. Gay, Merthyr; T. A. Goard, Exeter, E. Goodman, and A. Kendrick, Taunton; W. A. Hunt, Yeovil; H. B. Mason, Exeter (Honorable Secretary); J. C. Oliver, Cardiff; W. B. Pearsall, Dublin; H. C. Riches, Penarth; J. G. Robertson, Cheltenham; J. J. H. Sanders, Barnstaple; G. Thomson, Torquay; G. W. White, Newport; W. Woodruff, London; A. B. Phillips, Falmouth; and the following visitors—Messrs. G. Robinson, W. Badgery, J. Perrow, H. Gartrell and W. J. Trembath.

APOLOGIES FOR NONATTENDANCE.

The Honorable Secretary (Mr. H. B. Mason) said that letters apologizing for nonattendance had been received from Messrs. E. Apperly, W. H. Mayne, T. P. Ritchie, W. Helyar, R. Brown, H. H. Tuckett, Turner, White, Dr. Stack (Dublin), and Mr. Lennox (Cambridge).

NEW MEMBER.

Mr. A. R. Phillips, of Falmouth, was elected a member of the branch of the association.

NEW MEMBERS OF THE COUNCIL.

Messrs. E. Apperly and F. H. Colwill were elected members of the Council to fill the vacancies caused by death, and Mr. W. Helyar was reëlected.

REPORT OF THE COUNCIL.

The honorable Secretary read the report of the council, which after an allusion to last year's successful annual meeting at Bath, stated that at the April meeting of the council at Dartmouth a resolution was unanimously adopted in favor of the branches electing instead of nominating, as at present, members to the representative board. The council regretted that the board had decided not to proceed further in the matter at present. They considered the change very desirable, and felt sure that it could not be long delayed. The council had to lament the loss of two prominent members of the branch, Mr. Cooke Parson, of Clifton, and Mr. Pearman, of Torquay. The financial statement of the branch

was satisfactory, there being a balance in hand of £12.4s. The council had that day elected Mr. T. A. Goard, of Exeter, as honorable secretary of the branch in the place of Mr. H. B. Mason, who ceased to fill the position at the close of the present meeting. The council proposed that next year's meeting be held at Cheltenham, and nominated Mr. J. Lewis Robertson, of that town, as president-elect. The members now numbered 80 against 85. The report, together with that of the Treasurer, which had been audited by Messrs. Colwell and White, was adopted.

THE RETIRING PRESIDENT.

The retiring President delivered a brief valedictory address, in the course of which he thanked the members for having done their utmost to make the Bath meeting a success, and assured them that he should always be glad to do anything that lay in his power to advance the interests of the branch. On the motion of Mr. Hunt, seconded by Mr. Goodman, a vote of thanks to Mr. Dudley was carried by acclamation. The chair was then taken by Mr. J. H. Gartrell, the President elect.

THE PRESIDENT'S ADDRESS.

The President then delivered his address. He thanked the members very warmly for placing him in that honorable position, for to have the good opinion of the best men in his profession was something which he did not lightly esteem. When Mr. Gartrell joined the Association at its commencement it never entered his mind for a moment that he would ever attain to the position of President, and still less should he have thought that he would preside at a meeting of dentists in that far away corner of the country, and although he assumed the position with great diffidence and a sense of his unworthiness to fill it, yet he ought to feel proud that that was the first dental meeting, and that he was the first President of a meeting of dentists held in Cornwall.

He had lately given some consideration to the claims the country had to the benefits conferred by modern dentistry on the human race. The raw materials they used in the profession were to a great extent produced by Cornishmen. He might mention the metals in this connection, and particularly tin, which was of great use both in the mechanical and surgical departments. One of their demonstrations that day was a combination of tin and gold for filling teeth. Gold, the principal metal used both for dental plates

and for filling, although not found in the county in sufficient quantities to pay for mining, was chiefly mined by Cornishmen. The only gold mine in Great Britain had for its manager a native of that neighborhood.

Another natural production found in Cornwall in much greater perfection than any other part of her Majesty's dominion, and which was of very great importance in dentistry, was china clay. The feldspar and kaolin prepared from it were the two principal ingredients used in making porcelain teeth, of which from 25,000,000 to 30,000,000 were sold every year for use all over the civilized world. The general public were not entirely disabused of the notion that ivory and human teeth were used as substitutes.

During the thirty-four years Mr. Gartrell had been engaged in dentistry in America and England, he had never used an ivory or human tooth. It was to a Cornishman and a native of Penzance that they owed the discovery of the anæsthetic properties of nitrous oxide gas. Sir Humphry Davy, whose monument they might have seen, made this discovery about 1800, and suggested that it might be valuable in surgical operations. This suggestion, however, was not acted upon until about forty-four years afterward, and they must remember with pride that it was a dental surgeon, Dr. Wells, of Connecticut, who put the anæsthetic properties of the gas to practical use by extracting teeth under its influence. Dr. Wells, however, had an imperfect apparatus and did not succeed in bringing nitrous oxide into general use.

Another American dentist, Dr. Morton, discovered sulphuric ether and this overshadowed nitrous oxide for some years, chiefly because it required but little apparatus. Dr. Morton also used chloric ether, and from chloric ether Mr. Waldie, of Liverpool, separated chloroform. To dentists must therefore be given the credit of reducing to practice the great and merciful discovery of anæsthetics. Ether and chloroform threw nitrous oxide into the shade till 1863, when Dr. Colton, another dentist, began giving popular lectures on the gas in New York.

At that time Mr. Gartrell was practicing in the city and attended the lectures. He was one of those who went on the platform to inhale the gas for the amusement of the audience and to gratify his own curiosity. In this year, sixty-three years after its discovery by Sir Humphry Davy, nitrous oxide was effectually introduced as an anæsthetic. Dr. Colton associated himself with three other

dentists of New York, and the four devoted their time to the preparation of mouths for sets of artificial teeth.

In a short time nitrous oxide became generally used in the United States for dental operations, but was not introduced into England till 1868, when Dr. Evans, also an American dentist, exhibited it as anæsthethic at the London Dental Hospital. Since then it has been used in millions of cases, and for short operations such as occur in dental practice it is the best and safest anæsthethic known.

It is probably more dangerous to life to extract a tooth when a cardiac trouble exists without nitrous oxide than with it. There had only been, he believed, two or three fatal cases in this country, and in these the gas might not have been at fault.

Looking back over the subjects that had interested the dental world since their last meeting, it would be noted that some questions had advanced while others had receded in the interest they had created among the profession; for instance, a short time ago implantation attracted a great deal of attention, but scarcely anything had been heard of it for the last year or two. Perhaps this, like nitrous oxide, would take sixty-three years to come into general practice.

The President was among those who took an interest in it. He might add that he became a martyr to it. In 1887 he was in Washington, U. S. A., attending the International Medical Congress, and became acquainted with Dr. Younger, who was one of the first to reduce implantation to practice. He suggested to Mr. Gartrell that he should have two upper lateral incisors implanted in the place of those which had been extracted two or three years before. After inspecting a case of successful implantation Mr. Gartrell consented, and two teeth were found for his case, which, he was told, had been extracted in a case of irregularity from the mouth of a beautiful American lady. The teeth looked to his eye more like those from an Egyptian mummy, but after they had been sterilized Mr. Gartrell sat in the the operating chair before an audience of two or three hundred Americans and a few European dentists, among them Drs. Cunningham and Walker, who were there to see that the Britisher had fair play. Dr. Younger operated rapidly. In six minutes he had the gum slit like a cross, the hole drilled in the alveolus and one of the teeth in position. The other took about eight minutes to fix. The whole operation was

performed without any anæsthetic, and Mr. Gartrell confessed it took all his resolution to bear the pain. To hold the implanted teeth steady they were tied to the adjoining natural teeth with silk thread, and this made the operation unsuccessful. In spite of all Mr. Gartrell's care, the ligatures got loose, and although retied, he gave up the attempt to keep the teeth in his mouth longer than ten days. If a thin, soft platina plate had been used to hold the teeth in position the operation might have been successful. It was not at all impossible that in a shorter time than it took to introduce nitrous oxide, dentists would be able to implant beautiful sets of teeth in their patients' jaws without pain, which would answer all the functions of mastication, enunciation, etc., so perfectly as the natural set. The past year had been one of considerable activity in the mechanical branch of the profession. Crowns and bridges appeared to attract as much attention as ever, the great object being to avoid the intolerable objection of wearing plates. There was no doubt this method of supplying substitutes had come to stay.

One reason for the success of crowns and bridges was the greatly improved method now used in the treatment of roots and teeth with dead pulps. The general public were still quite ignorant of the improved methods now in use in conservative dentistry, and often thought that they must have teeth and roots sacrificed that could be treated and preserved for a life time.

In speaking of the efforts made by Mr. Rose, of London, and Mr. Turner, of Glasgow, to improve the continuous gum process, Mr. Gartrell said that base had been his ideal of plate work ever since he first saw it. He did not approve of the methods advocated during the last few years, and known as continuous gum facings on vulcanite plates; in the method he used soft platina was discarded entirely, the plate being made of hard platina.

With respect to the present position of the dental profession, he thought it might be considered satisfactory when they reflected it was only fourteen years since they obtained the Act of Parliament which gave them a legal status and established a dental register. The British Dental Association was then founded, and at present numbered, he believed, about 1,000 members. Unfortunately there had to be admitted to the register many hundreds of men who had no bona fide qualifications. Many hundreds of chemists' and dentists' assistants, for instance, got on the register merely on the

ground they had pulled teeth previous to 1878, while any boy who happened to be employed about dental laboratory in that year had been able to do likewise up to last year. They of course presented themselves before the public as fully qualified dentists, and in most cases a good deal better qualified than regular practitioners. It was of course, unfair to the public and an injury to the profession that such should be classed with the young men who had passed through the curriculum of the colleges and properly qualified themselves for the discharge of their duties; however, their number would gradually decrease. The medical profession, at the beginning of the century, had to pass through the same experience, and they must be content to follow on the same lines. There were men among the British dentists to whom the profession was greatly indebted for their efforts to elevate it. The President was not able to boast of having very materially assisted them. In the first place he was educated in Canada, and practiced for eight years there and in New York before he located in his native town; and here he was so far away from the great centers of dental authority that he had only been an humble soldier in the ranks of the British Dental Association. In conclusion, he welcomed the members to Penzance, with the hope that their visit would repay them for the long distance some of them had traveled, in the opportunity it would give them of viewing the beautiful coast scenery and the other objects of interest which abounded in the neighborhood.

At the conclusion of the President's address a vote of thanks was accorded to him on the motion of Mr. Balkwill.

THE ESSENTIALS OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL, FOR THE USE OF STUDENTS. By E. A. Schäfer, F. R. S., Jodrell Professor of Physiology in University College, London; Editor of the Histological Portion of Quain's "Anatomy." Third edition revised and enlarged. Philadelphia: Lea Bros. & Co., 1892, pp. 298. Price, cloth, \$3.

To the average student Histology is the most uninteresting study in the curriculum. Anatomy is dreaded, but physiology and histology are nightmares.

That this is so is due not to a scarcity of text-books, but a lack of suitable ones.

Some one has said, "It is an easy thing to write a book, but it is very difficult to write one that will be read." This is especially true as regards students' text-books.

From the date of its first appearance Schäfer has been a favorite not only with instructors but with students. Its universal recognition is shown by its being on the list of books recommended by most of the English speaking colleges.

In the present volume the same character is preserved as in former editions, but the size of the pages has been cut down, making the book more convenient to handle. The paper and press-work are also superior to that of previous editions.

The work has been thoroughly revised, obscure passages rewritten, and much new matter incorporated.

In the choice of illustrations the author has been singularly fortunate. The old schematic diagrams have been largely discarded and their places supplied by illustrations that resemble the object for which they are intended. Many new illustrations have been added, most of which have never before appeared in a work of this kind.

The matter relating to the microscope and the preparation of microscopical objects has been entirely rewritten, and, although brief, covers the entire subject.

In its present form Schäfer is the most complete hand-book of histology at our command, giving, as it does, an outline of the structure of all the tissues of the human body, and presenting it in a way that makes it intelligible to a student of average ability.

For an exhaustive study of a particular subject the larger works would be necessary, but for the student commencing the study or for a practitioner desirous of reviewing histology there is nothing superior.

H. N. L.

POST GRADUATE DENTAL ASSOCIATION.

SYLLABUS OF DENTAL ANATOMY.*

Requisites for the course:

1st. BLACK'S ANATOMY OF THE HUMAN TEETH.

2d. A sufficient number of human teeth for study. These should consist of at least twelve teeth of each denomination,—i. e. twelve upper central incisors; twelve upper lateral incisors; twelve

*Prepared by Dr. G. V. Black.

upper cuspids, and so on with all of the teeth of the human mouth. A greater number would be better. These should be as free as possible from caries, and a considerable number of them should be teeth removed from young persons so that the surface markings shall not have been obliterated by wear.

One or more skulls with as perfect teeth as possible.

3d. Instruments for making dissections. A thin saw in a strong frame. A good vice; such as is used by dentists. Several good files, flat and quarter round. A dentist's grinding lathe. A number of wood blocks one-half inch square by one inch long on which to fasten teeth with sealing wax for convenience in printing silhouettes. Ink pads, ink and rubber. Two memorandum books for silhouettes, one to be retained by student and one to be sent to the Post Graduate Dental Association.

(See Black's Dental Anatomy, paragraphs 158, 166, 171 and 179.)

SECTION 1.*

DENTAL NOMENCLATURE.

Names of the teeth. Names of the parts of the teeth common to all. Names of the surfaces of the crowns of the teeth and the modes of expressing their relation to each other. The angles of the teeth—how named; also the edges and cusps. The surface markings of the crowns of the teeth; grooves, sulci, fissures, or faults. The ridges, tubercles, supplemental grooves, interproximate spaces, bell crowned teeth, thick necked teeth, etc.

Every subject must have a set of names and phrases peculiar to it, called its terminology, or system of nomenclature, and which must be learned by students of that subject before they can communicate with each other, or read effectively.

SECTION 2.

THE UPPER CENTRAL INCISOR.

Note. Study the table of measurements carefully in connection with each tooth as it is presented in the sections.

In studying the illustrations remember that they are pictures of individual teeth and will not always correspond with the text which describes average forms. Their principal uses to the student

*The subject treated in one section is to be studied in one month. Every student is at liberty to cover the ground in less time or more time.

should be as aids in locating surfaces, and surface markings, on the natural teeth in his collection, which are the real objects of study.

Form of the crown. How the cutting edge is formed. Names and forms of its surfaces. Difference in the forms of the mesial and distal surfaces. The angles. The gingival line. The gingival line not the line of the free margin of the gum. (See par. 211 and 212.) Curvature of the gingival line. Developmental lines or grooves. The crowns of the teeth divided into lobes, each lobe beginning its development separately and the developmental lines or grooves mark their junction. Form of the roots of the upper incisors.

THE UPPER LATERAL INCISOR.

Differences in the sizes and form between the several parts and surfaces of this tooth and the central incisor. Note carefully the curves of its several surfaces and angles, and especially the difference between its mesial and distal surfaces. Gingival fissure.

SECTION 3.

THE LOWER INCISORS.

General outlines more slender than the upper incisors. Developmental lines or grooves the same but much less marked, and generally not visible. Lines of the cutting edges of the central and lateral different. The distinctive form of the distal surface of the lower lateral. Roots of the lower incisors slender and much flattened. Form of the body of the root. Form of the apex of the root.

SECTION 4.

THE UPPER CUSPIDS.

Observe carefully the form of the crown and root. The mesio-distal width of the crown as compared with the neck of the tooth. The cusp, angles, convexity of labial surface; the lingual surface narrower than the labial and caused by the form of the flattening of the mesial and distal surfaces. The gingival ridge longer than that of the incisors. Curvature of the gingival line. Size and length of root; form of body of root; form of apex of root.

SECTION 5.

THE LOWER CUSPIDS.

Slightly smaller than the uppers, and more slender. Form of mesial surface as compared with the distal. Effect of the pro-

trusion of the distal angle on the general form of the tooth, crown and root. The peculiar manner in which the form of the cusp is changed by wear. Form of the labial surface; form of the lingual surface. Absence of prominent ridges or grooves. Form of root. Form of apex of root. Peculiar curve of the tooth the crown and root taken together.

SECTION 6.

THE UPPER BICUSPIDS.

The form and relative size of the lobes of the bicuspid. How changed from the forms of the incisors and cuspids. The outlines of the occluding surface of the *upper first bicuspid*. The forms of its ridges; of its grooves; its sulcus; its liability to pits and fissures. The buccal surface; its cusp, angles and grooves. The smooth rounded lingual surface with its cusp. Make a careful analysis of the forms of the mesial and distal surfaces with reference to the formation of contour fillings and the perfect finish of margins. The forms of the root; generally two roots, but not always.

Upper second bicuspid. Resembles the first but is smaller. The cusps, ridges, sulcus and grooves are less prominent; the pits closer together and the buccal triangular ridge narrower. There are often a number of small supplemental grooves in the occluding surface. The tooth has not so much of the bell crowned appearance. The buccal surface narrower from mesial to distal. The proximate surfaces more rounded. The lingual cusp nearer the mesial than the distal. The root a little longer than that of the first in proportion to the crown. Generally but one root, crooked roots are frequent.

SECTION 7.

THE LOWER BICUSPIDS.

The lower first, the smallest of the bicuspid. The lingual cusp nearly wanting and the buccal very large. Trace the grooves of the occluding surface carefully and make out the form of the lobes. Ridges of the buccal cusp. The marginal ridges prominent, giving the tooth a strongly belled crown. The lingual lobe variable as to size but generally very small. The buccal cusp is to the distal of the perpendicular line. The proximate surface well rounded.

The lower second bicuspid is a little longer than the lower first

and the lingual cusp better developed. It presents three typical forms of the occluding surface in which the grooves are differently disposed. The root is larger and longer than that of the first.

SECTION 8.

THE UPPER FIRST MOLAR.

Note carefully the language of paragraphs 66 and 67 before beginning the study of the first molar, then study the illustrations, carefully comparing them with the natural teeth point by point, until all of the surface markings are located. Then follow out all parts of the text. Distinguish carefully between four cusped and five cusped teeth, and the modifications between these, in which there is only a line indicating the position of the fifth cusp. Follow carefully the outlines of the lobes and trace the grooves dividing them. Note also in your collection of teeth the differences of form produced by the greater or smaller development of certain lobes. The forms of the proximate surfaces of these teeth are of special importance.

This tooth will be found the most complex of the human teeth, and therefore difficult, but the text is very full and complete.

SECTION 9.

THE UPPER SECOND AND THIRD MOLARS.

Note particularly the differences in form produced by the diminution of the disto-lingual lobe as compared with the upper first molar, and the otherwise less perfect contour of the teeth. The entire absence of the fifth lobe in the second and third molars. The forms of the teeth in the almost complete absence of the disto-lingual lobe. The forms of the three cusped teeth in the complete absence of the disto-lingual lobe. If the differences in the forms given to the several surfaces of the teeth by these changes in the forms of the lobes be carefully noted in following out the text they will be readily fixed in the mind. The forms of the necks and roots of these teeth should receive careful attention.

SECTION 10.

LOWER FIRST MOLAR.

A five cusped tooth. Lobes and developmental lines are arranged on a different plan from those of the upper molars. Study the illustrations, first comparing them carefully with the teeth in your collection until the lobes and grooves are well made out.

Then follow out the text, comparing it paragraph by paragraph with the points as illustrated by the teeth themselves. In this way the forms of the lobes individually and the forms of the surfaces of the tooth as a whole will be easily made out and the several grooves fixed in the mind. Observe the grooves and parts of grooves that are most liable to fissure. Note particularly the differences of form produced by the more or less full development of individual lobes among the teeth in your collection, especially the distal lobe and the variations in the form of the distal surface thus produced. Two roots with the bifurcation closer to the crown than in any other tooth. The forms of the roots of this tooth are particularly important in their removal after breakage of the crown.

SECTION 11.

LOWER SECOND AND THIRD MOLARS.

The lower second molar is like the lower first with the distal lobe left out and the disto-buccal lobe joined with the disto-lingual and with the changes in form which this implies. It is the simplest tooth form in the human mouth. The developmental grooves form a simple cross dividing the four nearly equal lobes. Note particularly among the teeth in your collection the variations from the typical form produced by the unequal development of the lobes of some of the teeth. This tooth is particularly favorable for the study of triangular ridges, and the occasional observation of transverse ridges and supplemental fossæ. Note carefully the forms of the mesial and distal surfaces, etc.

The lower third molar is very variable in size. It has two typical forms, and is often very irregular in form. Note particularly the form, and the variations of the form, of the neck and root of this tooth with relation to the fitting of bands for crowns, or the support of bridges.

SECTION 12.

The Deciduous Teeth with the exception of the first deciduous molars. In studying the deciduous teeth compare them critically point by point with the corresponding permanent teeth and note particularly the differences pointed out in the text. Make in this way a comparative review of the permanent teeth, studying the differences in form found in the deciduous teeth. It should be particularly remembered that the text is only a guide to the study of the teeth themselves.

SECTION 13.

THE DECIDUOUS FIRST MOLARS.

These are different from all other human teeth in their lobal construction. The *deciduous upper first molar* has only three cusps divided by three developmental grooves. The buccal marginal ridge is a high cutting edge broken by a groove into two cusps. There is but one cusp to the lingual. The lingual surface smoothly rounded, and much inclined toward the occluding surface. The buccal surface is also much inclined toward the occluding surface, is flattened over much of its surface, but has a remarkable ridge running nearly horizontally near the gingival line. The neck of the tooth has the characteristic constriction of the deciduous teeth in a marked degree.

The *deciduous lower first molar* has four lobes but differently disposed from any of the other four lobed teeth. It has one large and one small fossa in the occluding surface. The four developmental grooves radiate from the larger fossa, divide the four lobes, and break the marginal ridges into four cusps. The buccal surface has a prominent bucco-gingival ridge similar to that of the upper first. The roots of these teeth are spread widely apart to accommodate the bicuspid which are developed between them.

SECTION 14.

THE PULP CHAMBERS.

The plans laid down in the text for the dissection of the teeth and the study of the pulp chambers are to be substantially followed, and the prints should be made in duplicate, one copy to be retained by the student and one copy returned to the Post Graduate Dental Association, Masonic Temple, Chicago, as an evidence that this part of the work has been properly done. Students will find that wood blocks one-half inch square and one inch long on which to fasten dissected teeth with sealing wax for printing will be better than to rely on the sealing wax alone as recommended in the text.

As large a number of teeth as possible should be dissected (not less than three of each denomination) in order that the variations in size and form of the pulp chambers may be well observed.

Note that the pulp chambers require for their description the technical use of certain words and phrases, as coronal portion, root canal, apical portion, apical foramen, horns of the pulp,

etc., and that these terms are applied and used in a special sense necessary to this subject.

PULP CHAMBERS OF THE UPPER INCISORS AND CUSPIDS.

The pulp chambers of these teeth have no distinct division into coronal and canal portion, the one merging imperceptibly into the other. Three short horns on the extreme coronal portion in young incisor teeth. Only one usually in cuspid teeth. They gradually become narrower from the broadest part in the crown to the apical foramen.

In dissecting teeth always study carefully plans for obtaining access to the pulp chamber for the removal of the pulp and filling the root canal, and note the size and form of the apical foramen.

SECTION 15.

PULP CHAMBERS OF THE LOWER INCISORS AND CUSPIDS.

Three short horns extending from the extreme coronal portion of the pulp in young incisor teeth. Only one in the cuspids, and this is apt to be long and slender. In the incisors the canal portion is much flattened, the long diameter being from labial to lingual, or it is divided into two very small canals which in most cases reunite in a common apical foramen. In the lower cuspid there is great variation in the size of the pulp chamber and root canal in different teeth, and occasionally a division of the canal portion. Note carefully the flattening of canals in teeth with flattened roots.

SECTION 16.

PULP CHAMBERS OF THE BICUSPIDS.

All of the dissections recommended in the text should be made of specimens of each of the four bicuspid and the prints should be made in duplicate.

Note that in the upper first bicuspid there is generally a distinct bulbous coronal portion of the pulp with horns extending toward the point of each cusp, and that these are often slender and sharp in young teeth. Note carefully how the root canals leave the pulp chamber with reference to entering them with a broach through a cavity in the crown of the tooth. Study carefully the variations in the form of the pulp chamber in the several bicuspid and the peculiarities of each; and note that in the lower bicuspid, and occasionally in the upper second, the bulbous coronal portion is usually funnel shaped toward the root canal.

SECTION 17.

PULP CHAMBERS OF THE UPPER MOLARS.

Make all the dissections recommended in the text for each of the three upper molars and print them in duplicate.

In all of the upper molars, except rarely in those with a single root, the coronal portion of the pulp chamber is very distinct from the root canals. The horns of the pulp point to the apex of each of the cusps on the crown. Give particular attention to the *molar triangle*, and to the position, size, form and direction of the several canals as they leave the pulp chamber with reference to entering them with a broach through cavities in the crown, and follow them carefully to the apical foramen.

SECTION 18.

PULP CHAMBERS OF THE LOWER MOLARS.

Make all of the dissections recommended in the text of specimens of each of the lower molars and print them in duplicate so as to return one copy to the Post Graduate Dental Association, Masonic Temple, Chicago, and retain the others.

The coronal portion of the chamber is very distinct from the canals. Horns extending crownwise toward the apex of each cusp on the crown. Note carefully the position, form, size, and direction of each of the canals, and especially if there is a funnel shape that will direct a broach into it. Study the position best for the handle of the broach when directing its point into each canal supposing the tooth in its normal position in the mouth. Give especial attention to the forms and operative difficulties presented by the two canals in the anterior roots of lower molars.

SECTION 19.

PULP CHAMBERS OF THE DECIDUOUS TEETH.

A general review of the pulp chambers of the permanent teeth and a comparison with them of the pulp chambers of the deciduous teeth. The deciduous teeth are so difficult to obtain in suitable condition for this work that it is not expected that every one can return a full list of prints, but the greatest number possible should be dissected.

SECTION 20

ARRANGEMENT OF THE TEETH.

(Paragraphs 187 to 192 inclusive.)

The elliptical form of the arch. The arch of the lower teeth a little smaller than the upper. The particular manner in which the cusps and sulci of the upper and lower teeth fit into each other in occlusion. Arrangement to prevent the crushing of the soft parts between the teeth. The line of the occlusion from before backward, or the plane of the occlusion. The relative mesio-distal position of the teeth in the upper and lower jaws when in occlusion. The inclinations of the teeth.

In the study of this section as many skulls with good sets of teeth as possible should be used, but especially all of the points in the text should be verified by an extended study of good natural arches in the living subject. Casts of these are excellent for study. Also, read carefully an article by Dr. I. B. Davenport published in the *Dental Cosmos* for July, 1887, the part pages 413 to 433 inclusive.

SECTION 21.

INTERPROXIMATE SPACES AND PROXIMATE CONTACT.

(Paragraphs 193, 194, 195.)

In the study of this section, in addition to the text, return to the tables of measurements and examine carefully the mesio-distal measurements of the crowns and necks of the teeth, noting their differences. Make a careful review of the forms of the proximate surfaces of the teeth with reference to the form of the immediate proximate contact. Make out from the study of the proximate surfaces of the teeth in your collection the form of the contact points and observe carefully the size and forms of the facets produced by the wear of the contact points against each other. On this point study Dr. Black's article in the *DENTAL REVIEW* for June, 1892. Also, read Dr. Davenport's article in the *Dental Cosmos* for July, 1887, part from page 433 to 439 inclusive.

SECTION 22.

THE ALVEOLAR PROCESSES AND ALVEOLI.

The roots of the teeth lodged in alveoli. Alveolar processes. The alveolar borders. Thickness of the alveolar walls on the labial buccal and lingual of the roots of the upper teeth. Buccal alveolar ridge. Anterior palatine foramen. Borders of the alveolar

process about the teeth of the lower jaw. Effect of the external oblique ridge. Thickness of the alveolar walls on the lingual sides of the lower teeth. The milo-hyoid ridge. The thin lingual wall over the root of the third lower molar and its advantage in the removal of the root of this tooth. Septi of the alveoli. Structure of the alveolar processes.

SECTION 23.

THE PERIDONTAL MEMBRANE.

The peridental membrane invests the roots of the teeth and lines the alveoli, forming the attachment of the teeth to their sockets. Continuous with the gums and periosteum over the alveolar borders. It is one membrane only. Blood vessels, nerves and lymphatics. Its white fibers. Conditions in childhood; in old age. Its blood supply. Its nerve supply.

SECTION 24.

THE GUMS.

Character of the tissue of the gums. Firmness of the gums near the teeth. The characters presented in different parts of the mouth. Connections with the lips. Frænum labium. Frænum linguæ, etc. The gingivæ, or free margin of the gums around the teeth. The gum septum, etc.

In connection with this section, study Dr. Black's article on the interproximate spaces in the June number of the DENTAL REVIEW, 1892, and make extended studies of the forms presented by the gums in the living subject.

SYLLABUS OF CROWN AND BRIDGE WORK.*

Medicinal preparations, instruments, tools and materials requisite for the study and practice of crown and bridge work.

MEDICINAL PREPARATIONS.

Oil cloves or cassia.

Oil eucalyptus.

Creosote. (Refined.)

Carbolic acid.

Aristol.

10 per cent solution of cocaine.

*PREPARED BY DR. GEO. EVANS.

Surplus of the solution during its application should be instantly absorbed with absorbent cotton or bibulous paper and patient instructed not to swallow saliva. Mixture of one part chloroform, 3 parts of aconite to apply locally to the gum margins to relieve pain.

Chloroform.

Peroxide of hydrogen.

Aromatic sulphuric acid.

INSTRUMENTS.

Corundum points, disks and wheels.

A set of Brown's are suitable.

Separating files, two or three with small curved points, similar to what is used to trim the cervical part of a filling.

Pulp canal probes.

Pulp canal broaches.

Pulp canal filling instruments:

Three Gates-Glidden drills, small, medium, and large, for direct use.

Three each of the same for right angle attachment.

Hot air syringe.

Root canal dryer.

Clamp instrument to hold sponge to moisten corundum wheels and protect the tongue and cheek when grinding in the mouth.

Excising forceps.

Excavators, hatchets, hoes, and spoon shaped, rights and lefts.

Syringe.

Dunn's abscess syringe.

Mouth mirror, small and large.

An Abbott foot shaped condenser.

Spear shaped drills.

Spatula.

Burnishers. Burs, round and fissure.

TOOLS.

Large Tweezers.

Small Tweezers.

Ordinary Straight Pliers.

Narrow-pointed Pliers for bending gold collars.

Riveting Hammer.

Punch Forceps.

Plate Files, flat and half round.

Hand-Vise.
Small Anvil.
Set of Crown Dies or Plates to stamp occluding surfaces.
Two Wire Clamps, one straight pointed, the other ring-shaped
at the points, for use in soldering.
Bunsen Burner.
A Lee or Mellote's Gas Blow-pipe.
Mouth Blow-pipe.
Shears.
Charcoal to solder on.
Alcohol Lamp (jeweler's size.)
Knife.
Small Ladle.
Impression Cups. (Full and partial sizes).

MATERIALS.

German silver plate and wire.
Some porcelain plate teeth—cross pins.
Old fashioned pivot teeth.
Waxed floss silk.
Absorbent cotton.
Square glass bottle on which to mix cement.
Gutta-percha.
Gutta-percha points for filling root canals.
Wax cement (one part wax, two parts rosin).
Sulphate of potassium.
Carmine for coloring plaster impressions.
Sheet copper No. 35 U. S. gauge.
Copper wire No. 28 gauge.
Fusible metal and mouldine, pulverized soap stone.
Olive oil.
Vaseline.
Sandarac varnish.
Calcined marble dust.
Common sand.
Impression compound, wax.
Pure gold plate, No. 30 gauge.
Gold and platina crown metal, No. 32 gauge.
Thin platina plate.
Thin platina foil.

Platinum wire, No. 16 gauge.

Silver wire for posts, 15 gauge.

20 carat gold solder.

18 carat gold solder.

14 carat gold solder.

Parr's flux.

Fluxed gold solder filings.

Corundum tape, corundum disks and carrier.

Pulverized pumice and whiting.

Moose hide points and mandrils to carry same.

For a thorough and systematic study of Crown and Bridge Work over a period of twenty-four months, the subject is divided in sections as follows :

SECTION 1.

Preliminary study of forms of teeth and position of root canals. Reaming of root canals, and filling of them with gutta-percha.

For the purpose insert natural teeth in position in plaster models of the mouth and mount the models on a Bonwill articulator. Fasten the articulator so it will not open more than the mouth would, and work on it in a line or position similar to that in which the mouth would be. Open up the pulp cavities from all possible positions, and ream out the canals of teeth thus mounted. Likewise perform shaping of natural crowns and roots for insertion of artificial crowns. In actual practice knowledge and skill in these operations are of vital importance, as on them depend the practical value of all others.

SECTION 2.

Shaping of natural crowns and roots for crown work.

Insert posts and otherwise prepare and restore roots and natural crowns for artificial crowns. Draw outline of cervix of any tooth and bend narrow strips of metal to represent collars, to the shapes of different cervices from memory, then compare them to the recognized forms.

SECTION 3.

Study and practice the insertion of porcelain crowns. A few old style pivot teeth will answer the purpose. Crowns similar to the Logan or Brown can be made by first cementing a post of wire in the porcelain crown with oxyphosphate cement. By first cementing a post in a root a crown can be used in a manner similar to the

Bonwill, Perry or How crowns. Attach the crowns with gutta-percha amalgam or oxyphosphate cement.

Make dies of forms of teeth and models of the mouth as described in "Evans' Crown and Bridge Work," using copper tubes and impression cups.

SECTION 4.

Practice the construction of gold crowns with porcelain fronts without a collar.

SECTION 5.

Make, shape and fit collars for all the different teeth.

SECTION 6.

Make all metal crowns for bicuspid and molars.

SECTION 7.

Make collar crowns with porcelain front for incisors and cuspids.

SECTION 8.

Make collar crowns with porcelain front for bicuspid in the different methods described in "Evans' Crown and Bridge Work."

SECTION 9.

Make shell crowns or anchorages for bridge work. Make all-metal crowns for long and short or abraded incisors and cuspids.

SECTION 10.

Study and consider the principles involved in the construction of bridge work; the abutments used. Make an extension bridge consisting of a central collar, crown and a lateral bridge tooth or dummy with spur resting on cuspid.

SECTION 11.

Make a bridge consisting of a shell crown for second bicuspid, with pin in sulcus of occluding surface and dummy or bridge tooth for first bicuspid.

SECTION 12.

Make a gold crown for molar, shell crown for cuspid, and bridge between them consisting of two dummy bicuspid.

SECTION 13.

Make bridge between lower first bicuspid and second molar; place all metal crowns on the abutments.

SECTION 14.

The same as last described with a cap and pin attachment on top or occluding portion of bicuspid. The bicuspid is supposed to lean in a posterior direction toward the molar.

SECTION 15.

Make a bridge of four lower incisors between two shell crowns on cuspids.

SECTION 16.

Make a bridge in which an artificial inferior right central and left lateral are sustained by shell crowns on right lateral and left cuspid, with a connecting bar spanning the intervening tooth present.

SECTION 17.

Make a bridge as follows: Cap with metal first right bicuspid, make collar crown for right central and left cuspid, and bridge with dummies the vacant spaces between the crowns.

SECTION 18.

Make an extension bridge of one or two teeth.

The construction of bridge work described for the preceding months should be conducted the same as in practical cases. Remove the crowns in position from the models as though the models were the mouth. Varnish the models and smear with a little vaseline to permit easy removal of plaster. Unless this work is proceeded with in this manner, many obstacles met with in the construction of bridge work will not be encountered and an amount of experience of great practical value to the student be missed. The bridge when finished must fit the model correctly; if not, the bridge must be altered to do so, and *not the model made to fit the bridge*. Inaccuracies and mistakes the student is thus obliged to correct.

In cementing with oxyphosphate cement compare the difference between mixing the cement on a glass slab at 70° F., and on a flat sided bottle filled with ice water at from 35° to 40° F.

SECTION 19.

Make detachable bridge to fit between molar and bicuspid that tip toward each other, according to method described as the "Parr," in "Evans' Crown and Bridgework."

SECTION 20.

REMOVABLE BRIDGE WORK.

Make removable partial cap for metallic crown on molar (see Evans' Crown and Bridge Work, 3d edition), clasp and cap attachment for cuspid and bicuspid.

SECTION 21.

Make removable crown with porcelain front for a cuspid with a tube and spring post in root.

SECTION 22.

Make removable bridge between lower second molar and first bicuspid.

SECTION 23.

Make removable plate bridge between second molar and cuspid.

Practice making flat connecting bars for use between attachments or sections of a removable bridge.

SECTION 24.

Make bar bridge, one end to an anchor in occluding surface of first molar and other end in cuspid, the anchorage material to be gold foil or its equivalent.

Make a gold tip to restore the broken end of an abraded central incisor also a lower central or lateral.

German silver plate and wire and ordinary silver solder are suitable and economical metals for use by students in the study of the construction of crown and bridge work.

Platinum foil will need to be used to a limited extent to form the caps to collars and backings to porcelain fronts.

Owing to the superior flowing qualities of gold solder when melted, in comparison with silver, twelve or fourteen carat gold solder should be used in small fine solderings.

DENTAL COLLEGE COMMENCEMENT.

LOUISVILLE COLLEGE OF DENTISTRY.

The commencement exercises of the Louisville College of Dentistry, dental department of the Central University of Kentucky, were held at Macauley's theater, June 21, 1892. The degree of Doctor of Dental Surgery was conferred on the following named (33) candidates:

Harry B. Bartlett, Kentucky.
 Charles H. Barton, Massachusetts.
 Z. Bell, Mississippi.
 C. Forest Bogges, Kentucky.
 Louis C. Chatham, New York.
 Israel Cook, California.
 Andrew Crossley, Texas.
 Marion Hargis Dailey, Kentucky.
 W. P. Hill, Tennessee.
 Jas. T. Hull, Missouri.
 Alfred T. Hyde, California.
 John W. Juett, Kentucky.
 Joseph J. Kennedy, Missouri.
 William B. Kidd, Kentucky.
 E. G. McMackin, Illinois.
 T. Ellwood Morgan, Missouri.
 Charles E. Nary, Kansas.

Emmet Peyton, Illinois.
 Eduard Pfander, Switzerland.
 George W. Pringle, New York.
 William J. Reynolds, Alabama.
 E. C. Robinson, Ohio.
 Thomas O. Sherman, Illinois.
 J. Fred Sigler, Kentucky.
 J. Avery Spaulding, New York.
 S. L. Strickland, California.
 Albert L. Stringer, Illinois.
 Warren Xerxes Taylor, Wisconsin.
 Alanson S. Thomas, New York.
 V. W. S. Trippett, Indiana.
 Clement Victor Vignes, Louisiana.
 Robert Houston Walker, Kentucky.
 E. T. Zewicki, Missouri.

MEMORANDA.

Dr. L. J. Mitchell, of London, Eng., has been visiting in Chicago recently.

Dr. B. J. Bonnell, of London, is in New York for a short visit to old friends.

Nineteen students passed their first examination at the "école dentaire de Paris" last month.

Drs. P. V. Guerry and S. E. Gilbert, of Philadelphia, spent a few days in Chicago last month.

If your town is big enough to hold three or four dentists why do you not increase their usefulness by establishing a reading circle, and study?

The summer vacationists have all returned and the treadmill is again buzzing around as usual. Most of them will have something for the Congress next year.

M. G. Blocman has been named an officer of the Academy in France. This is the second time within a year that one of our confrères has been so honored.

Dr. J. A. Kimball, a dentist of New York, committed suicide August 16, while suffering from melancholia. He had recently issued a dental journal called *The Dentist Himself*.

Dr. L. C. Bryan, of Basel, Switzerland, President of the American Dental Society of Europe, paid us a visit with his wife in August. Dr. Bryan is now in the far west and will return to Basel about November 1.

NEW DENTAL COLLEGES.

One new in Cleveland, Ohio; one in Detroit, Mich.; one in Columbus, Ohio; one in Buffalo, N. Y., and one in Bridgeport, Ala. Next!

The dental department of the University of Denver, which has been erroneously reported as having been discontinued, has recently been reorganized, the faculty having been added to, and the prospects for the future are said to be flattering.

Geo. Northcroft, D. D. S., Michigan, class of '90, is now a student in the dental hospital of London. He took the Saunders prize this year for being the best all round man in his studies in the dental school as above. His preceptor in England was W. Mitchell, D. D. S., (Mich.) 1878.

From the report of the Department of Health of the city of Chicago for 1891, we see that eighty-one deaths out of a total of 27,754 were due to dentition. The same authority places the number of dental supply houses in Chicago at eleven, employing forty males and twenty females, and the number of dental establishments last year was 470, giving employment to 625 males and seventy-five females.

The Rev. Sam Small last November got into a broil and had one of his teeth knocked out. He sued his assailant and assessed his damage at \$5,000. As Sam has thirty-two teeth he thus estimates their value at \$160,000. The jury thought that pretty high and took off one cipher and gave him \$500, thus making the aggregate for Sam's teeth \$16,000. This is liberal, as a full upper and lower set can be had in any market for \$20.

Dr. Lauder Brunton, in the course of a recent lecture on "Mastication," at St. Bartholomew's Hospital, made use of the following remarks: "I think it was a magnificent stroke of genius on the part of the President of the Royal College of Physicians, Sir Andrew Clark, when he informed Mr. Gladstone that he had one mouth and thirty-two teeth, and that for every mouthful of food he took every tooth should have a chance, so that he should take thirty-two bites to every mouthful. And," continued Dr. Brunton, "if the patient has lost some of his teeth he should allow two bites for every missing tooth, and even that will not always do if many teeth have gone."—*Exchange*.

At the Eighteenth Annual Meeting of the American Dental Society of Europe, held in Basel, August 1-3, the following officers were elected for the ensuing term: President, Dr. L. C. Bryan, Basel; Vice President, Dr. J. H. Spaulding, Paris; Treasurer, Dr. Chas. J. Monk, Wiesbaden; Secretary, Dr. Chas. W. Jenkins, Zürich; Executive Committee, Dr. Bryan, of Basel, Dr. H. Dane Hurlburt, of Geneva; Dr. J. F. Patterson, Montreux; Membership and Ethics Committee, Drs. Spaulding, Weitzel, and Davenport, of Paris.

The next meeting will be held at Geneva, in 1894; the meeting next year being omitted, as many of the members expect to attend the congress at Chicago.

ZURICH.

CHAS. W. JENKINS, Sec'y.

CALIFORNIA STATE DENTAL ASSOCIATION.

The Twenty-second Annual Meeting of the California State Dental Association was held in San Francisco, July 19th, 20th, 21st and 22d. On account of the

"Columbian" congress in 1893, the next annual meeting will be advanced to the second Tuesday in June.

The Board of Trustees is composed of the following officers: President, W. Z. King, First Vice President, L. A. Teague; Second Vice President, I. W. Hays; Third Vice President, J. P. Parker; Corresponding Secretary, Chas. E. Post, 302 Stockton Street, San Francisco, and Recording Secretary, L. Van Orden, 14 Grant Avenue.

CORRIGENDA.

Summer vacations are seldom well borne by ye proof-reader. It is then that he turns himself loose as it were and makes *pi* of piety, and other things too numerous too mention. On page 676 it says he did his level best: *L' Odontologie* should read *D' Odontologie*, Blocman for Blacmon, Chauvin, Prevel, Ronnet. Lecoudrey should be Lecaudey. Copot is Papot, and last but not least, on page 658, the intelligent reader readily would read *leptothrix buccalis* for *lipidodes tocolis*. We sometimes grow weary at repetitions of stale jokes, but never will our digestion be good until a satisfactory terra cotta monument is placed over the mortal remains of some member of the proof-reading brotherhood. Peace to their ashes.

FLEXIBLE RUBBER PLATES.

TO THE EDITOR OF THE DENTAL REVIEW:

Herewith I give you the result of a little experiment in thin, flexible rubber plates.—Wax up the case in the usual manner. After trying in the mouth to see that it is correct, fasten the outer rim solidly to the cast with wax, then cut out the wax from palatal portion and burnish tea lead in its place; letting it come up well around the teeth. Flask as usual and after washing out the wax and removing the lead apply dry heat to the case to dry the surfaces, then paint with liquid sillex; the heat of the case will soon dry the sillex. Make a good large gate at heel for surplus rubber and pack the same as for thick plate, using black rubber for palatal portion. Care must be exercised in cutting away surplus, not to split the thin rubber. The polishing can be done with brush and cotton wheels. No scraping or sandpapering necessary. This makes a much pleasanter plate to wear in the mouth and gives better satisfaction to the wearer.

Yours truly,

BUTTE, MONTANA.

W. G. STOWELL, D. D. S.

STANDING RESOLUTION PASSED JUNE 13, 1892, BY THE ODONTOGRAPHIC SOCIETY OF CHICAGO.

WHEREAS: We have among our members those who are connected with dental colleges, which are continually violating the code of ethics of the American Dental Association, and,

WHEREAS: This practice has a deleterious effect upon the students of said colleges by teaching adherence to a code of ethics, while practicing the opposite, therefore, be it

Resolved: That members of the Odontographic Society who are in any way connected with dental colleges who shall violate the code of ethics of the society shall be held equally responsible, as they would be if said violations occurred in their private practice. Be it further

Resolved: That any matter other than the NAME, ADDRESS; OFFICE HOURS and telephone number, that shall be authorized by a member of the society to be placed in a public print of any kind shall be considered as a violation of our code of ethics and subject said member to the penalty provided for such violation.

NORTH DAKOTA STATE DENTAL SOCIETY.

The North Dakota State Dental Society held its Tenth Annual Meeting in Grand Forks, August 17th and 18th. There was a good attendance and an addition of six new members.

Dr. T. E. Weeks, of Minneapolis, was present and gave an interesting clinic on contour gold fillings, restoring interproximal space, and also a lecture on forms and structure of teeth illustrated by stereopticon views.

Dr. A. T. Bigelow, of St. Paul, who was the first dentist to locate in North Dakota, read a paper entitled: "Pioneer Dentistry in North Dakota," which was listened to with interest because of its historical data and the amusing situations in which the Doctor sometimes found himself.

Dr. Louis Ottogy also contributed to the historical part of the proceedings, as well as giving a paper on "Post Graduate Study," which met with much favor among those present.

The meeting gave promise for better things and a greater interest in the Society for the future.

Dr. H. L. Starling, of Fargo, is President, and Dr. R. B. Foster, of Grand Forks, Secretary for the ensuing year.

MOUTH BREATHING CHILDREN.

The dangers to children accustomed to breathing through the mouth instead of the nose have been quite seriously treated of late, in papers on the subject by physicians in Germany, France, England, etc., the principal disturbance accompanying the habit being described as inability to fix the attention on any more or less serious subject, and with this impairment of the attention goes feebleness of memory and tendency to headache, while in some cases the organs of sight and hearing are successively affected, conjunctivitis and hardness of hearing being the results. In Germany, some time since, Dr. Max Bresgen placed before the Minister of Public Instruction a request that a regular medical supervision should take place in schools, especially with regard to the state of the upper respiratory organs of the school children. In France also Dr. Raulin has published the same views, laying great stress on the necessity of regular medical inspection not only of the schools, but also of the school children, especially with respect to the state of their nasal respiration. Dr. Guye, of London, also declares that so long as medical school inspectors are wanting, teachers should be impressed with the importance of giving attention to the question of mouth-breathing, especially in children intellectually backward.

MISSOURI STATE DENTAL ASSOCIATION.

The Twenty-seventh Annual Meeting of the Missouri State Dental Association was held at Clinton, Mo., July 5th to 8th inclusive. There were twenty-six new members admitted and eleven papers read.

The following is the list of officers and committees elected for the ensuing year: President, J. D. Patterson, Kansas City; First Vice President, W. E.

Tucker, Springfield; Second Vice President, DeCoursey Lindsley, St. Louis; Corresponding Secretary, Wm. Conrad, St. Louis; Recording Secretary, H. A. Rubey, Clinton; Treasurer, Jas. A. Price, Weston. Executive Committee: C. B. Hewitt, Kansas City; A. J. McDonald, Kansas City; J. E. Crozier, Lees Summit. Board of Censors: E. E. Shattuck, Kansas City; H. A. Cress, Warrensburg; E. B. Crane, California. Committee on Ethics: Frank Slater, Rich Hill; J. B. Newby, St. Louis; C. L. Hungerford, Kansas City. Law: Jas. A. Price, Weston. Committee on Publication: J. E. Crozier, Lees Summit; T. J. Frey, Moberly; C. L. Hickman, St. Louis. Committee on New Appliances: C. L. Hungerford, Kansas City. Supervisor of Clinics: C. H. Darby, St. Joe.

The next meeting will be held at Excelsior Springs, Mo., on the first Tuesday after July 4, 1893.

ST. LOUIS, MO,

WILLIAM CONRAD,
Corresponding Secretary.

JAPANESE DENTISTRY.

In Japan the dentist extracts every tooth, be it upper or lower, incisor or molar, without the use of an instrument, his fingers having been trained to take the part of the forceps. And, although it may seem incredible, it is nevertheless a fact that the Japanese dentist is more proficient in his art than his European brethren, and here is the way that he arrives at his proficiency:

In a board of soft wood holes are drilled, and in the holes pegs are inserted loosely.

The board is laid on the floor, and the apprentice tries to pull out every peg perpendicularly without in the least disturbing the position of the board, using the thumb and forefinger of his right hand. Able to do this, the pegs are inserted tighter, the thumb and forefinger gaining strength and dexterity in manipulation as he keeps on practicing.

Having perfected himself at the pine board, an oak board is substituted, the oak pegs being driven in tightly. There he practices for weeks and months, till, finally, the oak pegs succumb to the skill and power of his fingers.

The third and last term comprises the extracting of maple pegs, very tightly fastened into a maple block. Passing the required examination at this block, he is graduated and sent forth to try and pull "human pegs."

There we see him take a position similar to one we would assume, hold the jaw and keep the mouth open with his left hand, while with the two fingers of his right he passes into the mouth and extracts, if necessary, five to seven teeth in a minute.

ESSENTIAL-OIL VAPORS AS BACTERICIDES.

The bactericide action of the essential oils has been well established by a number of experimentalists. Recently, however, M. Omeltschenko has made experiments which not only confirm the views held previously, but establish also the quantity of vapors necessary per litre of air. He arrived at this fact by using specially contrived culture-flasks, and passing through them air impregnated with the vapors to be studied. Among the results obtained he gives the following: The bacillus of typhus is killed by air saturated with oil of cinnamon or oil of valerian, in 45 minutes; 0.0005 gramme of the first oil per litre of air was necessary, while 0.0082 gramme was necessary of the second. The bacillus of tuberculosis is killed by the vapors of cinnamon in 23 hours, the air contain-

ing 0.018 per litre. It is killed by oil of lavender in 12 hours, 0.0078 gramme per litre being the amount necessary. The oil of eucalyptus destroys this germ also in 12 hours, but the degree of saturation must be 0.0252 gramme per litre. Among his conclusions we find that the vapors of oil contain a considerable degree of activity as disinfectants when the air saturated with them is constantly renewed. When the degree of saturation diminishes, the vapors destroy the germs at the beginning, but after that they only prevent their growth. Regarding their germicidal properties, he classifies the oils according to their strength, as follows; The oil of cinnamon, the oil of fennel, oil of lavender, oil of cloves, oil of thyme, oil of mint, oil of anise, oil of eucalyptus, oil of turpentine, oil of lemon, oil of rose. The two last named, lemon and rose, are very slight disinfectants.—*Bacter. World.*

POST GRADUATE STUDY.

It is wonderful what a store of valuable knowledge one can gain in a year by employing, say, one hour a day in systematic and selected reading. Picking up what comes handy and reading at random may be pastime and no doubt with a retentive mind one may gain some knowledge. So one may climb a mountain without guide or direction and come out on top; but no doubt with a guide knowing the best routes and how to cover them without wandering, one may gain the top much more safely and surely and in better condition "to view the landscape o'er" appreciatively. There is the same difference in progress in system and lack of system in reading as in anything else. A dentist or any busy man reading and searching for that which will benefit him most wants the chaff separated from the wheat as much as possible. If you read for a purpose you must read to the point. The importance of this thing is being recognized all over the land and the needs of the people, the busy man of affairs, etc., in getting knowledge and education which for some cause was neglected in earlier life, is being appreciated by many large educational institutions throughout the country, and the wants of such people supplied by what is known as university extension, a system of educating people and conveying desired knowledge to them at their homes. The Post Graduate Dental Association assumes to take up such work among dentists and extend a course of readings which as rapidly as can be will be arranged to suit all classes of practitioners from highest to lowest. Opening a way also for those who begin at the lowest to reach the highest classes. The effort of the association in this direction is certainly a commendable one and should become popular and successful. To be successful it should have the support of the profession at large, and it is certainly deserving for undertaking a work so entirely a labor of love and aiming only to elevate and advance the dentist in practice.

PRELIMINARY ADDRESS OF THE COMMITTEE ON A DENTAL CONGRESS.

It is the aim of the World's Columbian Exposition to gather together the evidences of the material progress and achievement of the civilization of the world, and so arrange them that every department of human endeavor may be studied and examined through all its various grades of development.

It is also their desire to represent the intellectual and scientific development and achievement of the entire civilized world by a series of great Congresses, to be held during the progress of the Exposition.

In pursuance of this object the World's Congress Auxiliary was organized by

the World's Columbian Exposition, and it has received the recognition and support of the government of the United States.

It is the plan of the World's Congress Auxiliary to bring into communication, through these Congresses, the best thinkers and workers in every department of knowledge, including Religion, Science, Philosophy, Literature, Art, Agriculture, Trade and Labor, etc., and by the presentation and interchange of ideas, methods, theories and practical experiences to promote the advancement of all that is noblest and best of our present civilization.

Committees have therefore been appointed to organize a series of Congresses, representing nearly every field of thought, and of speculative and practical endeavor.

In the field of professional achievement, Medicine and Surgery, in their various special applications, will form a very large and interesting feature of the work of the World's Congress Auxiliary.

Dentistry is an important department of Medical Science, and an outgrowth of our modern civilization. Its present perfection is in considerable degree due to the thought and labor of American minds.

The history of modern dentistry is covered by a period of less than two generations, and yet it has advanced from the rude operations practiced by the blacksmiths and barbers, to one of the most scientific and exact of the specialties of the healing art.

Scientific Dentistry had its birth in the United States of America. This country has the proud distinction of having organized the first school for the teaching of dental science, and the establishment of the first periodical journal devoted to the interests of dentistry, while very many of the most useful appliances and scientific methods have originated on this side of the Atlantic.

It is therefore eminently fitting that Dentistry be represented at the World's Columbian Exposition by a display of the progress which has been made in the development of its materials, instruments, appliances, processes and methods of a practical nature, and in scientific research, literature and professional education.

With this end in view the dentists of the United States took steps in August, 1890, to organize such a World's Congress, by the appointment of a General Executive Committee, to whom the whole matter of organizing and conducting the Congress was referred.

The work therefore of the Committee on Dental Congresses appointed by the World's Congress Auxiliary will be chiefly in coöperation with that General Executive Committee, in publishing to the world from time to time the progress of the work of organization in promoting the interests of the Congress in every way within their power, and keeping it in harmony with the general plans of the World's Congress Auxiliary.

Every effort will be made to secure the best talent in the presentation of scientific subjects, and in practical demonstrations.

The World's Columbian Exposition, through its Directory, will provide ample accommodations for all the various World's Congresses to be held in Chicago in 1893. The Memorial Art Palace now in process of erection upon the shore of Lake Michigan, and located near the center of the city, will be devoted to this purpose. This building will contain two large audience rooms, with a seating capacity of about three thousand each, which will be used for the general Congresses of the various departments, besides numerous smaller rooms,

suitable for the Chapters and Sections of the Congresses, thus affording for the Dental Congress ample accommodations for clinical demonstrations of a suitable nature.

During the sessions of the Dental Congress several popular evening meetings will be held, to which the general public will be invited. At these meetings, which are intended to be educational, illustrated lectures will be delivered by some of the most eminent men of the profession upon topics which are deemed to be of vital importance to the public. These meetings will be especially under the control and management of the World's Congress Auxiliary. When the suggestions of the Advisory Counselors of the Dental Congress shall have been received as to the most interesting and vital questions to be presented, a programme will be arranged for publication.

A cordial invitation is extended to the dentists of the world to take part in the scientific work of the congress by the presentation of papers and discussions or demonstrations of new or improved methods and appliances.

America, and Chicago in particular, will have a hearty welcome for all who may come.

An earnest effort was made to bring the meeting of this congress in close connection with others of the Department of Medicine, but that effort having proved unavailing, arrangements have been effected under which the meeting of the dental profession will be held on or near August 17, and is expected to continue during the week or ten days following. Definite dates and details will be given in the programme.

Communications in reference to the special work of the congress should be addressed to Dr. A. O. Hunt, Secretary of the Executive Committee World's Columbian Dental Congress, Iowa City, Iowa, U. S. A.

Communications in reference to the general work of the World's Congress Auxiliary and suggestions from the Advisory Counselors may be addressed to the chairman of the committee.

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ORIGINAL COMMUNICATIONS.

COMBINING AMALGAM AND GOLD.

By E. A. ROYCE, D. D. S., Chicago, Ill.

Our subject this evening, the combination of gold and amalgam, requires consideration of the qualities of each of the metals separately. For all ordinary cavities in teeth of good or even medium structure, gold has proven itself to be the best and most perfect filling material.

When a cavity has been properly prepared in a tooth of good structure, and the gold is well condensed, we expect the form of the filling will not change, and as long as the walls remain firm the gold will retain its position and preserve the tooth, if a good joint is made between the gold and enamel. It is the tooth that disintegrates, if the joint becomes imperfect.

The color of gold is somewhat objectionable in the mouth, but is far superior to amalgam, as it usually retains its bright yellow, and even if it does grow dark it does not stain the tooth. But one of the best qualities of gold is its cohesiveness, which enables us to add one piece to another in such a manner as to restore the tooth which has broken down to its original shape, and the place where this is most useful is in the proximate cavities of bicusps and molars.

Those of us who attended the Illinois State Society and heard Doctor Black's paper on "Interproximate Spaces" will remember what great importance he attached to these spaces. This is a subject which is of great importance and has been very much neglected by the profession. A tooth may be plugged or stopped when the proximal face is left flat, but not filled in the proper sense of the

word, many operations coming from the hands of those who stand high in the profession, show that there is almost a total disregard of this and the shape of the teeth in some cases would remind one of saw teeth. Teeth with V shaped spaces between them are almost useless for purposes of mastication. The food wedging up against the gum is a source of great irritation, not only to the gum but to the peridental membrane and periosteum as well, causing absorption of process and gum, and frequently loss of teeth. Gold is the only material now at our command with which we can make a positive contour filling, as it is also the only material with which these spaces can be perfectly preserved. But gold acts simply as a stopping, as it has no medicinal effect upon the tooth, and if the stopping is not perfect, or the tooth is of poor structure, the gold acts as an assistant to the destroyer of tooth substance.

Some time ago Dr. Whitefield demonstrated before this society that there is an electric current between different metals when used as fillings.

Dr. Bridgman is quoted as saying that "any plug in a proximal cavity, as in the external basal area of the molars, will have the cervical edge continually wet, while the upper part may be comparatively dry. And therefore it will assume the polarized condition."

Now it is true that an electric current generated in this way may not be very strong, and would not in itself disintegrate a tooth. Neither can bacteria batter down the walls of a tooth; but Dr. Miller has demonstrated beyond a reasonable doubt that acids which are formed by chemical action caused by bacteria will deprive a tooth of its lime salts. So it has also been very clearly proven that electrolysis breaks up some of the chemical compounds of the fluids of the mouth, the elements finding their way, each to its respective pole of the battery, where uniting with their affinities they form new chemical compounds, some of which are acids of sufficient strength to act upon tooth substance. Defective manipulation and defective tooth structure allowing moist dentine to act as the corroded or inferior metal of the battery accelerates the disintegration. While dry tooth substance that is thoroughly impregnated with lime salts is a poor conductor of electricity and will resist the action of the acids, thus tending to limit the galvanic action. As the only saving quality of gold is keeping moisture and other extraneous matter out of the cavity, and it has many

agencies working against it, causing repeated failures of fillings from the hands of the best operators, and so many more from the hands of others, is it any wonder that we look to some other material for the preservation of teeth of poor grade?

Amalgam is used very largely for fillings and is saving many teeth, but at what an expense of efficiency and beauty.

It is a very difficult operation to fill teeth with amalgam. I know this is not the accepted idea, and in many cavities it is a mere matter of drill a hole and putty it up, but take the proximal cavities of bicusps and molars and fill them so as to restore the contour, fill them so as to preserve the interdental space and morsal surfaces, build up cusps that are gone, leave no flat surfaces, but round out good points of contact, restore the tooth and keep it restored until the filling is hard, and you will prove that you possess more skill than is shown in one amalgam filling in one hundred that is inserted in the mouth.

The spheroidal tendency of amalgam destroys the usefulness of some of the most carefully inserted fillings, great crevices are found between tooth wall and the metal that in many cases cause failure, and in others are saved only by the deposit of insoluble salts around the amalgam. The oxidation of the amalgam preserves the tooth by excluding moisture, its antiseptic properties and also as a nonconductor of thermal changes and electricity.

In this brief statement we find that gold lacks some qualities which are necessary to preserve a certain class of teeth, and also that amalgam lacks many qualities necessary for the most perfect restoration of these organs. Gold has its place and should be used where it is indicated, but one of the most popular errors that has ever crept into our profession is that of using gold in all places and under all circumstances. The result of the errors of judgment in the selection of filling material stares us in the face continually. Gold should never be used because it is gold. The color of gold combined with the popular idea, will never save a tooth. Select your material to suit the case in hand.

Using amalgam regardless of indications or surrounding conditions is as great a mistake as the other. To scoop out a little of the decay and throw in a little amalgam is very easy, but it does not give the patient the best that can be done. It is to displace amalgam where gold is contra-indicated, that I use so largely both gold and tin and gold and amalgam in combination.

Amalgam was first used in combination with gold to repair gold fillings where decay had recurred at cervix. This was soon followed by the use of gold upon amalgam that had previously hardened, and from this it was but a step to the use of gold upon the surface of freshly inserted amalgam.

The operation of filling with gold and amalgam has been so frequently described that it is not necessary for me to give more than a brief outline. The cavity may be prepared as for gold, except at the neck of the tooth where it should be shaped for an amalgam filling with very slight if any grooves, and no pits. This portion need not be cut as deep, or as square, to get a good seat for the filling as for gold, tin, or gold and tin. Where the cavity extends well under the gum this is many times a great advantage.

The amalgam should extend from one-fourth to one-half of the distance from cervix. Any good amalgam may be used. It should be used dry and care taken to thoroughly pack it to its place. A matrix seems a necessity, but should extend only far enough to hold the amalgam and cover the union between gold and amalgam.

Any of the so-called plastic golds will work with the amalgam, but Watt's Crystal has proven in my hands the most satisfactory. The mercury seems to affect its working qualities very little and there is little waste.

This gold when placed upon the fresh amalgam absorbs mercury so readily that I have found that I could not depend upon the color to tell if it was thoroughly condensed, and as this is one of the most important points care should be taken that every piece is placed so it is in positive contact with the amalgam. Enough of the plastic gold should be used so the color of mercury is not seen and then the filling may be finished with any gold, giving the contour desired.

Here we have an amalgam guard to a gold filling. The first advantage gained by this is, as you can readily see, in cutting the cavity to which I have referred, ease of adaptation in cavities difficult of access, less liability to fracture margins at cervix or in very frail teeth, preservative qualities of the oxidation, in short all the saving qualities of amalgam combined with the positive contour, edge strength, beauty, stability, etc., of gold.

The gold and amalgam filling is a solid filling, not one filling built upon another, held by pits and grooves, but the union is per-

fect, so that retention in any part of the cavity assists to retain the whole structure.

The tendency of the amalgam to assume the globular form is reduced to a minimum by gold absorbing the mercury. The absorption leaves the amalgam slightly brittle, and in finishing it is better not to burnish this part of the filling.

Electrical shocks from the meeting of different metals in the mouth are readily stopped by inserting in each filling a small piece of the metal of which the opposite is composed. This with experiments which have been made proves that while there is galvanic action between the two metals at a short distance apart, it is imperceptible if the two metals are in perfect contact.

The color of part of the filling surely is not very desirable; but I much prefer that the filling should be dark over part of its surface than that it should be dark over all of its surface, as amalgam would be, and you will agree that the black at the cervix is far better than a recurrence of decay at that part.

If the gold should discolor, polish the gold but do not remove the oxidation from the amalgam, and you will have no further trouble.

My use of this filling is almost entirely on the proximate surfaces. I seldom see the necessity of it upon the morsal surface, as there is little advantage in this place over other combinations.

THOUGHTS ON DENTAL EDUCATION.*

BY J. D. HODGEN, D. D. S., SAN FRANCISCO, CAL.

The subject of dental education is every day commanding more and more attention, not only from the profession, but from the laity as well, and never before has the body corporate of the profession been so impressed with the vast importance of better facilities for teaching and more thorough practical training of students.

Since the time of the establishment of a separate and independent school for teaching the science and practice of dental surgery, our dental colleges have been constantly enlarging the curriculum of instruction. Nor have the better few of them spared any effort in their earnest endeavor to afford the fullest possible opportunity for the impartation and acquisition of knowledge. This not only

* Read before the California State Dental Association July 20, 1892.

in their own school, but they have compelled others less willing to adopt a prescribed standard of duration of course and methods of instruction.

That this was an arduous and self-imposed task, no one can deny, for ever since the accomplishment of the Delavan fraud, in Wisconsin, and the conferring of degrees "*honoris causa*" by the "grand old school," there has existed an element of impecuniosity in the ranks of the so-called dental educational institutions as difficult to combat, and as formidable a foe to honesty and integrity as it has been a commercial success. And, even since the inauguration of the National Association of College Faculties, colleges of less repute have been content to follow, and at that a great way off, those whose progressive spirit have spurred them on to their present standard. They are content, I say, to comply with the laws of that association, to just that extent which admits them to membership.

These are some of the barriers that have been and are being surmounted. These are the millstones that progression has been compelled to drag from about its neck.

However, be that as it may, the time of pupilage has been extended to three distinct years; and the terms have been lengthened to five months each. Though quite all of the best colleges demand the attendance of seven or nine full months, the College of Dentistry, University of California, has practically made its course three full years. It has made nine months of practical and didactic instruction obligatory in each year and the remaining three months, a "practical course" in the infirmary and laboratories with its full corps of demonstrators and instructors. This differing from the "regular course" only in the absence of didactic instructions; nor has the new resolution of the National Association of College Faculties worked any hardship or radical change in its curriculum; for eight years it has been a "three years" school, and to it belongs the credit of first adopting the nine months term.

Many colleges have been compelled to accommodate themselves to stringent circumstances, and to make the most of limited resources, they have struggled along in debt and out of it, spurning the proffered aid of making their's a commercial enterprise.

To such colleges do we as a profession owe our sincerest respect and fullest support; to such men as comprise their faculties do we owe our everlasting debt of gratitude; to such men as these

are we indebted for the high standard of excellence our profession has attained and which we enjoy ; and to such men is due the credit of eliminating the element of mercantile or commercial spirit. They have chosen quality rather than quantity.

The great problem of education is to secure in due proportion, instruction of the mental faculties and the development of practical manual training ; the chief faculty alike in the common education of children and the special education of later life. The object of instruction should be to impart facts so as to educate the mind in scientific thought, that it may be able to found a correct judgment ; to determine that which is true and that which is false ; and to place the proper value upon such. This accomplishment is of far greater value than the memorizing of facts.

The instructor should not only be a scholar in the science he is teaching, but he should also be skilled in the methods of teaching, being thoroughly capable of imparting that learning which he may possess patiently and scientifically. Truths are only effectively taught by those who have been tempered for their work by that enthusiasm that comes from a growing insight into some chosen mental field. Men thus equipped should compose all of our institutions of education ; men of experience and devotion.

The California State Dental Law is entitled, "An Act to Insure the Better Education of Practitioners of Dental Surgery, and to regulate the practice of Dentistry in the State of California."

But having secured such an act the question naturally arises how are we to practically "ensure the better education of practitioners of Dental Surgery," and how, are we to "regulate the practice of dentistry in the State." How are we as a profession to be enabled to bring about that condition of affairs which we all so heartily unite in agreeing to be correct and preëminently essential ?

The college is our educational center, the birthplace of our future brothers, and our own foster mother. How now, are we to so regulate this huge family that it may practically be under the control of the profession at large, governed and directed by those best fitted as dental educators, legislators, counsellors and leaders ?

The State Board of Dental Examiners is the legal protector of the profession and laity alike, but how are we as a profession and the laity as our patients to secure this protection unless the representatives of the profession, as a whole, unite with the representative of the people—the Governor—in selecting those who are

the best, the most able, the most enthusiastic, and the most devoted to fill its chairs, and to point out to us our rights and secure them for us?

The question is answered by the natural power vested in the State Dental Association by virtue of its existence which is authoritatively the profession. It is then the duty, as it is the privilege of every legitimate practitioner of dentistry in the State of California to become not only a member, but an active, energetic, and enthusiastic member. For what purpose, you ask: First, for the education of yourself and your brothers in return. Second, for organization and proper, ethical, legislative, and educational control of each other. In other words, to so thoroughly organize the profession in the State that it may be governed by those best fitted to govern it.

But you still cry—how shall this be accomplished? Let me explain: Let the State be apportioned geographically into seven districts, to be known as first, second, third, etc., districts; in each district organize a District Society who shall elect their members from the licensed ethical practitioners of that district, provide that every member of each of the seven district societies by virtue of that fact be a member of the State Dental Association, also provide that each of the several Presidents of the several district societies constitute the Board of Trustees of the State Dental Association.

The State Dental Law reads: Sec. 2. "A Board of Examiners, to consist of seven practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this act. The members to be appointed by the Governor from the dental profession from the State at large."

This section permits a further provision without tiresome and tedious legislation, in that it permits the appointment of the members of the board "at large." Then be it provided that each district society shall select two of its members, one of which shall be elected by the profession assembled at its annual meeting as the State Dental Association, as a candidate for the representative of his district on the State Board of Dental Examiners, subject to the approval of the Governor of the State.

Through such management the College and Board would work perforce hand in hand, shoulder to shoulder, ignoring selfish interests and giving place to a nobler and greater work, thereby solv-

ing the greatest problem of the day—the proper, scientific and manual education and training of dental students.

By this management the State would be thoroughly and impartially represented on the Board of dental examiners, as the letter of the law directs—"at large." It would insure the best man in the right place. Our annual meetings would be attended by hundreds instead of handfuls. It would be the grand reunion of the several families of a great family at which each would vie with the other in presenting the greatest and most complete number of their district, in presenting the most practical and scientific papers, or most logical discussion, and social enthusiasm. The quack, where ever might be his lair, would be shown as such, not only to his victims, but to all. The nonlicentiate would be forced to license, and the better practice of dental surgery would be insured and regulated.

COPPER AMALGAM.*

By P. J. KESTER, D. D. S., Chicago, Ill.

This very interesting material has long been used in England and the Continent in large quantities, but all efforts to introduce it into this country failed, as the amalgam was black and unclean and unsatisfactory and the process a secret, until Dr. Weagant, of Canada, published a method for making it, but like its prototype from over the water, it contained many impurities which made it utterly unfit for general use.

Then the inventive minds of our own dentists developed the idea of depositing copper on a surface of mercury, by which process the resulting amalgam was at least clean. This product was then hailed as the long sought for material which was going to save everything that could be saved by a plastic filling. How well it has fulfilled its promise you all know; like the newest street song it became the *fad*, and it seemed that *everybody* was using copper amalgam.

Gentlemen who had condemned amalgams of all kinds saw in it—or thought they saw in it, the material that was going "to fill a long felt want." It was used indiscriminately, it was plastered into every cavity where gold was not indicated, and the dentist congratulated himself that at last he had discovered a filling that was going to preserve teeth for all time to come.

*Read before the Odontographic Society of Chicago.

It was said that the only thing against it was its dark color, and the dentist when he looked into the mouth of his patient and saw what seemed to be a good prospect for a coal mine, chuckled with delight, and assured his victim that his teeth were all right now. Were they?

The writer was sharply criticised, for discouraging the indiscriminate use of this material, at a convention more than three years ago, by a gentleman who at that time was a strong advocate of copper amalgam, who now, I have reason to believe, has come to himself and is using it very sparingly.

That copper amalgam has some peculiarities which make it especially desirable in certain cases, any one who has used it for any considerable time will admit. It is indicated in such cavities of such teeth as are bathed in the saliva and mucus, and these are mostly found on the buccal surfaces of the second and third molars.

And it will be found useful in cavities which dip down below the margin of the gum in proximate surfaces, and then only when a small portion is used to fill the cavity to the gum border, finishing the filling with some other good amalgam or other material; gold even being placed on it with very satisfactory results by some good operators.

As moisture does not seriously affect it and it adapts itself to the inequalities of the walls, and as it undoubtedly possesses anti-septic qualities, it will be found useful in the filling of children's teeth (temporary). These three classes of teeth comprise about the limit of its usefulness, and we believe should be confined to them.

Copper amalgam is not indicated where the filling comes to a masticating surface. It will not do for bicuspsids or molars at any place except as indicated above. It is not good practice to patch old copper amalgam fillings with the same material, as it will be found invariably that the old filling will maintain its color and position, while the patch will remain bright and will soon waste away. It is a matter of history that a very large per cent of all copper amalgam fillings in all positions in the mouth will waste out.

The best (?) reason that I have heard for the indiscriminate use of copper amalgam was given by a dentist who replied to the question as to why he used it when he knew that it would fail in a large proportion of cases. He said: "I want them to come out, for then I can replace them with gold fillings." If this gentleman

will develop his talent he ought to be able to enrich himself during the world's fair year.

After a somewhat extended experience with amalgams the writer has come to some conclusions which may or may not be of value to the dentist. It has long been claimed—and with much apparent reason—that copper amalgam fillings were less liable to change in form than any other of the amalgams, and this we believe is simply following a general chemical principle that the more simple the composition of a substance the less likely it is to change, and that the ideal amalgam must be composed of the fewest possible component parts. And that the addition of gold, platinum, zinc, etc., is of no benefit to the alloy, except as it appeals to the pride of the operator.

It is very probable that the solubility (in mercury) of the metals used has somewhat to do with the resulting amalgam. We have found experimentally that copper amalgam contained about 66 per cent of mercury, while another alloy of silver, tin, and a trace of copper was readily dissolved in 50 per cent, and could be manipulated with 40 or 45 per cent. May it not be possible that the large amount of mercury necessary to form an amalgam with copper will account for the wasting of the copper amalgam plug.

The manner of mixing an amalgam has much to do with the results, and the same observation will apply to cements, plaster of Paris, and other substances which crystallize by the addition of liquids. The alloy or powder should be mixed with the liquid and not the liquid with the powder; "*e. g.*," if you were going to mix plaster you would not fill your bowl half full of plaster and then add the water, for if you did there would be an immediate crystallization which would render the results unsatisfactory. Cements do not work so well when the liquid is worked into the powder, and I believe that a better amalgam can be made if the alloy be mixed with the mercury, and added gradually until you get a proper consistency.

I am aware that I have wandered from the subject somewhat, but I refer to these matters as some things that have been developed by the experience I have had with copper and other amalgams.

In conclusion let me say that I would not condemn copper amalgam entirely, but my advice would be to study well the cases before using it, and it will be found that the places indicated will be the most favorable to the success of this material.

THOUGHTS ON THE DENSITY OF DENTINE.*

BY E. A. GILLETTE, D. D. S., NORFOLK, NEB.

The percentage of organic (animal substance) over the inorganic (bone substance) in the bone structure, is at its highest point in infancy. The inorganic, however, as though asserting that its material was the only thing that could give strength to the bones, commences to displace the organic, and filling up the places with its own substance, changes the skeleton from a soft, pliable condition, in which it may be easily bent without breaking, to that firmer state which permits the weight of the child to be supported on its feet. As the bone structure changes from the soft cartilaginous state of infancy and childhood to its firmer and more perfect condition as found in the grown person, possessing its full quota of inorganic material, so with the teeth in childhood, the dentine (the bone structure of the tooth) is in a soft condition, and needs to have a part of the animal substance taken away and its place filled up by the true bone material, that the dentine may be brought up to the perfect condition, where decay cannot molest or destroy. At this period of the child's life, when there is such a demand for the bone-making material to build up and strengthen the bones, and give density to the dentine, if there is found plenty of material at hand with which to build, it is well. But from the number of small statured men and women, the weak bones, the poor, miserable teeth we see every day, we are compelled to say that in too many instances there is a lack of bone material in the present generation. And there can be but one of two causes for this great evil. Either it is a lack of bone-making material in the system, or a failure on the part of nature to take up the material and deposit it where it belongs. To the last proposition we say no; nature does not fail in that way, so the only cause must be a lack of bone-making material. And if this is the cause, why should it exist? Either there is short-sightedness on the part of nature again in not being able to recognize a good thing and supply the system with the very thing so many people are needing, or there is a lack of bone-making material in the food we eat, which is the only thing nature has to construct with. To the first allegation we enter a denial for the defendant, nature, and plead not guilty. Nature does not do business in that manner.

*Read before the Nebraska State Dental Association.

Then there is nothing left for us to do but to say it must be a failure on our part to eat the proper food. Let us put the blame where it belongs. In the outside of the kernel of wheat (the hull or shell) is the only part in which is found the bone-making properties of that grain, and in our present manner of doing things, we throw away the outside in the shape of bran and middlings, and with it is thrown away the very part our osseous system needs. I speak of wheat in particular, for it is our best bone-making (material) food. Potatoes and vegetables in general do not contain bone material like this much abused grain.

There is bone food in corn, but the trouble is in the way most people use it. Feeding it to the horses and pigs does not put the bone material in the human system, except in extreme cases of the latter kind. And in drinking corn, the bone food has been lost in process of construction. (For their benefit) hypophosphites and other conglomerations have been put upon the market, that the dear people might go on throwing away their bone-making foods, and grow their bones in a sumptuous manner with these villainous compounds taken from a spoon. And with flourish of trumpets it is heralded to the world; the spring of perennial life is found; come and buy with money, and freely take your bone pabulum from our bottle, (beware of imitations; see that our trade-mark is on the bottle.)

The inorganic matter of bone substance must be taken from its inactive, inert condition, and changed by vegetable life to a condition where we can have it enter into our systems by assimilation. For it is not possible for the animal life to take hold of matter in its unorganized state; therefore our bone food must be prepared for us outside of the chemist's bottle, and we look to the vegetable kingdom, or to the animal, for the sustenance of life. The soft bones of chicken, veal or mutton, properly prepared, make the best kind of bone food, and will supply all of the demands of the system for that material, making teeth which are invulnerable to the attacks of decay.

Especially should mothers who have just passed through the period of gestation use plenty of bone food, to make up for the extra demands which have been made on her system. And mothers who nurse their children would do well to eat freely of soft bones through all of that time, that they may supply to the little lives intrusted to their care a proper amount of bone-making ma-

terial, and at the same time save their own teeth from destruction. For, if there is not a proper supply of bone material in their food, it will be taken from their own system; and how often have we seen a mother lose a good set of teeth because she did not eat the proper food for bone growth and meet the extra demand put upon her. And how often in people of middle life, and older, have we seen a hitherto good set of teeth lost because the person did not eat the food that would keep in repair his osseous system, and the bone material would be apparently taken from the teeth to make up the deficiency of some other part.

There must be more bone food used by the American people. It will make stronger men and women; it will prevent people from being dwarfed in size if given to children, and save them dental bills besides. Let us put upon our banners the motto, "More bone growing food."

PYORRHŒA ALVEOLARIS, OR RIGGS' DISEASE OF THE GUMS.*

BY M. W. SWARTZ, D. D. S., PEORIA, ILL.


When requested to contribute a paper upon this subject, I took it for granted that I was to confine myself strictly to the disease of the gums and peridental membrane coming under this head as the term is now applied, as at least there are a number of later writers upon the subject who make a decided distinction between this term as now employed and other terms used to designate other diseased or abnormal conditions of the gums and peridental membrane of a kindred nature. Earlier writers upon the subject made little or no distinction between this diseased condition in the general acceptance of the term as then employed and kindred diseases, but in treating the subject I employed a number of terms, and one of which was accepted as designating this condition, the following terms being those most generally used: "Spongy gums; phagedenic pericementitis; scurvy of the gums; inflammation of the gums; odontolithus; suppurative inflammation; gingivitis; alveolar pyorrhœa, etc.," the greater number of which are now employed to designate separate and distinct diseased conditions of the gums and peridental membrane. Therefore, I shall confine myself strictly to the treatment of the subject of pyorrhœa alveolaris,—a flow of pus from the alveolus.

* Read before the First District Dental Society of Illinois.

The term "Riggs' Disease" seems to have been applied to this affection on account of Dr. J. M. Riggs, of Hartford, Conn., repeatedly treating of special phases of the subject at society meetings, which has had the effect of calling general attention to, and of awakening interest in it.

Dr. G. V. Black, in speaking of the term *pyorrhœa alveolaris*, says: "The term *pyorrhœa alveolaris* expresses one fact common to all these forms after they have made considerable progress, including alveolar abscess as well—a *flow of pus from the alveolus*. It must be seen by all that when we come to a classification of these affections, this term loses all distinctiveness and cannot be of use. Possibly this name might be retained as expressive of the whole group of diseases in which there is a flow of pus from the alveolus, but this could not be of much value; especially is it objectionable after the use to which it has been put in the past. Therefore, I think it best to drop it altogether." But as neither Dr. Black or any one else has found a term more suggestive than the term to which he objects, or if found he does not employ it, I shall employ it as I know of no other term that is preferable.

Pyorrhœa alveolaris, or Riggs' Disease, is first indicated by an uneasy sensation; then inflammation of the margins of the gums; looseness of the gums about the teeth, which form pockets; necrosis of edges of alveolar processes; a tendency to hæmorrhage, inflammation extending deeper into the gums; small sulci filled with pus; looseness of the teeth and change of position of the same; disagreeable taste; peculiar fetor of the breath; dark livid color of gums, with thick margins, and often extremely sensitive to the touch; in some cases the gums are denuded of their epithelium, with a polished appearance, in others with a pimpled surface; the teeth, at length, held in their cavities by a tough ligamentous attachment, due to the change occurring in the peridental membrane. A simple form of this disease may manifest itself at the gum margin, indicating its presence by a congested appearance, beneath which may be found a granule of calcified material. While in many cases there is a general congestion of the affected gum, and a proneness to hæmorrhage; in other cases the gum may present an anæmic appearance—pale and bloodless. This disease may also be associated with syphilis, mercurial salivation and scurvy. The deposit of salivary calculus and calcified substance is supposed by some to be secondary to this disease, as a deep red and



denuded gum about the necks of the teeth may be present without any deposit. Yet in the vast majority of cases, this diseased condition is traceable either directly or indirectly to calcic formations about the neck and roots of the teeth.

True, it may be said that all the above named diseased or abnormal conditions of the gum and peridental membrane begin with an inflammation of the gingivæ. And also, it may be said that the term *pyorrhœa alveolaris*, is the term employed designating the ultimate termination of all the above forms of disease—even to that of alveolar abscess—if not checked before they have advanced to that stage.

All of the above diseased or abnormal conditions are of vast importance to us in our daily practice, for very few of us there are, who do not daily treat patients who have some one of these affections in a greater or less advanced stage. But particularly that of *pyorrhœa alveolaris*. Yet we have learned that this term is employed simply to designate the condition sure to be reached by the milder forms of disease of the gums and peridental membrane if allowed to progress. And for this reason, comparatively speaking, it is just as important that we give close attention to these milder forms of disease, in that they can more easily be brought into subjection than if allowed to drift on and terminate as above stated.

As I above stated, this disease is of vast importance to us, primarily, in its ravages upon the gums and peridental membrane, causing complete destruction of both; secondarily, the loosening of the teeth and the ultimate loss of these important organs. It is not enough for us, as dentists, in so important a subject to be simply able to define a term employed to designate a certain condition. And undoubtedly there is not a practitioner present who cannot diagnose a case coming under this head. To the contrary, notwithstanding, I fear far too little attention is given this subject in our daily practice. And further, that unless a case in an advanced stage comes under our observation, we little suspect the presence of such a condition, and as a natural consequence we do not examine the mouths of many of our patients to ascertain whether or not such a condition exists; or if we examine for this purpose at all, the examination is too frequently conducted hurriedly and more or less carelessly.

To illustrate the carelessness given this subject by some, I will say that during the six months spent in a preceptor's office, not one

case of pyorrhœa alveolaris received any attention whatever, save in the superficial cleaning of the teeth, and that to be done in a manner which would not cause hæmorrhage of the gums. I was inexperienced, but nevertheless I was not oblivious to these cases when they came under my observation. But to venture a suggestion relative to this condition being present in any given case, or to the treatment of the same, was to commit a wrong that would not be easily forgiven or readily forgotten. Therefore, I determined to hold my peace and not incur the ill-will of the gentleman under whose instruction I was for the time. However, at one time when no one save he and myself were present, I referred to the subject, at the same time asking him if he considered the thorough superficial cleaning of the teeth all that was necessary to restore the gum to its normal condition. The answer came, "Just clean the teeth well, but do not make the gums bleed, and they will come out all right." Well, I did as directed, but had serious doubts while performing this operation upon certain patients, although I did not know what condition existed, or just of how much importance it was, but felt sure that something was not as it should be. You may ask, did the gums heal after the teeth were thus treated? I answer, *by no means*. Yet how many of us follow almost in detail this line of treatment. And if we do, with what success do we meet? We may remove the deposits from about the necks of the teeth. But if pockets have formed, the diseased condition advances, probably not as rapidly, but assiduously, and if anything to make more certain its destructiveness, in that after we have cleaned the teeth superficially, we dismiss the patient, and then for the time the patient is lost to us. We do that patient a gross injustice to say the least. Most certainly it was necessary to remove the deposit from the necks of the teeth, for this was, at the inception of the disease, the cause of the inflammation of the gums and peridental membrane, and the recession of these tissues from the necks of the teeth. But so far as the superficial cleaning of the teeth goes as a means of treatment, to say nothing of the arresting of the disease, amounts to practically nothing.

As I above stated, by all means remove the deposits from the necks of the teeth. But what condition do we find beneath the gum margin? It is stated in a few words: At the free margin of the gum the saliva deposits a product of that secretion known as salivary calculus. And where the formation of pockets has begun

as a result of this deposit, we have along its line on the root of the tooth a deposit distinctly different from the above, a product deposited and derived from the serum of the blood, known as serumal calculus. This last deposit is the one which keeps up the diseased condition known as *pyorrhœa alveolaris*--a flow of pus from the alveolus. True, no tissue can retain its healthful condition if in contact with salivary calculus. And in any case it is not the deposit of calculus that is to be so much feared, as the continuance of that deposit, of whichever character, in contact with the tissue; for this it is that brings about the evil results. One may say that he has seen the presence of this disease when no deposit was to be found upon the root of the tooth. But I think by close and careful examination we will find more or less deposit present, if we have failed before to discover the fact. We cannot be too thorough in the examination of all cases, and particularly in those where at first there seems to be no deposit present. How many teeth have become almost useless, or entirely so, if indeed not lost altogether, through carelessness or improper treatment. This is a subject of far more importance than is generally understood, and which demands and should receive the greatest care and attention.

A dentist once told me that he scarcely ever treated the inflamed and swollen gums of his patients, and especially was he averse to doing so when they were very bad, as he considered it far better to not meddle with them while in this condition. He also stated that one could not receive proper compensation for the time and trouble enlisted in the treatment of such cases, so what is the use to trouble one's self about it. I do not think I am presuming at all when I state, in the first place he did not understand or know what the trouble was, or what diseased condition existed; secondly, not knowing or understanding what the trouble was, of course he would not know how to treat the condition; thirdly, not knowing how to proceed with the proper treatment of the condition, he certainly could not expect to be rewarded for something he was unable to accomplish. If he really thought that one could not receive proper compensation for the time and trouble enlisted in the proper treatment of such cases, I think could he have effected a cure of a marked case of this kind, he would certainly have occasion to change his opinion upon the subject. For in practice I have found that patients, are as a rule, willing to pay

one quite well for the proper treatment of this disease. Impress upon them the necessity of having this condition corrected. If the patient be slow to comprehend the necessity of treatment, you can readily call to mind one or more cases in which the patient has, through carelessness or sheer neglect, lost one or more of the teeth. If the subject is brought before them in a way that they can be made to understand its importance, few indeed will hesitate to have the necessary treatment carried out.

Once more I would impress the necessity of a thorough and rigid examination of the mouths of all those who visit us professionally. Not only the lower incisors, cuspids, bicuspid, and the superior molars, where this disease most commonly manifests itself, but examine each and every tooth in the mouth. I have seen the absence of the disease in all the teeth save the superior incisors; or when it existed only in the second or third inferior molars; or again, only the superior cuspids being affected. In short there is no rule governing the seat of this disease. And you can only be sure of its absence when you have examined each individual tooth and have in each case found the gums and peridental membrane free from any such affection.

As to the treatment of cases coming under this head, a great deal has been said. I shall at the proper time give you simply the treatment followed in my daily practice. I shall quote no authority upon the subject for I trust we all have been enough interested in the subject to have looked into it. Much more, however, is to be learned from clinical observation. If any of us have failed to properly look into the subject, then I consider it most important that we do. Not merely as a means of knowing how to treat the disease, but that we may also know and understand the vast bearing it has upon the all-around success in practice. We may be successful in everything else we do, and in every other operation we perform. But if we fail in this particular, it is far more serious than at first may appear. And before we are incited to take active steps to arrest any disease, we must, first, know of its presence; second, understand its aggressiveness; third, realize its destructiveness. The point I wish to make is simply this: In proportion to the degree of demand and necessity of action in a certain direction, the manifest interest in that direction will be; and to fully comprehend and appreciate the necessity of action in a certain

direction, we must understand upon what grounds the demand is made, and upon what basis our subsequent action depends.

There is one other subject to which I wish to call especial attention before I enter upon the treatment of this disease. It is in reference to the employment of proper mouth washes during, and for a time subsequent, to the treatment of the patient in the chair. I consider it very important, and to the employment of such washes I attribute much of the success with which I have met. And I have also found that far greater progress is made when proper washes are used. And I fear that in the matter of mouth washes, we, as a rule, overlook their value and underestimate the results that can be attained by their proper use. For what, I would ask, have we a dental *Materia Medica* and *Therapeutics* if we do not employ it? For a great portion of these works treat of washes for the mouth, and the good to be derived from their employment. Indeed I have few patients for whom I do not prescribe.

THE TREATMENT.

First of all in any given case, thoroughly and completely remove all deposits from the tooth and its root. Be sure of this, for upon the thoroughness of this operation very largely—I may say entirely—depends the success with which we are destined to meet. Have no fears as regards the hæmorrhage of the gum during this operation or any part of the treatment of these cases. Of course do not cause pain to the patient by unnecessarily lacerating the gums. But in practice I have found that free hæmorrhage in advanced cases seems to prove a benefit rather than a detriment. Also that when the gums become more or less lacerated during the removal of the deposit from the roots, the condition seems rather to promote a healthy condition than otherwise. However, considerable care should be exercised during this operation, for upon the extent to which the gums will be restored to their natural height and position about the root of the tooth, depends the condition of the remaining portion of the peridental membrane. And in fact it is quite as necessary to preserve the peridental membrane for this purpose, as it is to preserve the periosteum while operating upon diseased bone.

In the removal of the deposit from the root, it requires considerable skill, which can only be attained by practice. A steady hand and considerable confidence in one's self will aid in acquiring the necessary skill.

As regards instruments for this operation, I think the set made by the direction of Dr. Geo. H. Cushing are best when the pushing force is to be used. However I use others as well, and sometimes when the teeth are very irregular, I discard them and employ still others. In short, I use the instrument best adapted to the case in hand, even though it be a spoon excavator. For I do not think one can judiciously confine himself strictly to the use of any one set of instruments in this operation.

For an injection into the pockets after the removal of the deposit, I am partial to the use of peroxide of hydrogen. But to derive the greatest amount of good from its use it must be fresh. When it cannot be thus obtained, I use a solution of carbolic acid, from two and one-half to ten per cent, or any of the other good antiseptics or disinfectants. For the purpose of injecting I employ a Dunn's syringe where the pockets are not very deep. When the pockets are deep, I employ the ordinary metallic syringe which is used almost daily by all of us. By the employment of this last mentioned instrument, greater force can be obtained than from the Dunn syringe, and for this reason I usually prefer the larger one, as one can apply force enough to thoroughly wash out all foreign matter from the pockets.

After thoroughly injecting the pockets, absorb with absorbent cotton all moisture about the tooth to be further operated upon. And then by the use of a piece of soft pine wood cut in form of a tooth-pick, force into the pocket, its full distance, finely pulverized fresh cupric sulphate. For this purpose I employ nothing else. This operation will likely cause considerable pain, but never mind that. Heroic treatment is demanded. And if this operation is thoroughly performed at first treatment, in many cases nothing further need be done than the injection of the antiseptic and disinfectant. I am not in favor of too frequent treatment of these cases. And unless the case in hand is far advanced, I advocate the lapse of five or six days between treatment. Of course in the meantime I have the patient use some good antiseptic and disinfectant wash, alternately with a wash that tends to toughen and harden the gums. And in many of the milder forms of this disease after the removal of the deposit, I confine myself strictly to the employment of washes, and the results attained in almost every instance are very gratifying indeed.

The washes I employ are principally the following:

CLASS ONE.

• ANTISEPTIC AND DISINFECTANT.

Acidi Carbolici (Cryst).

Glycerini.

Aqua Rosæ, aa ℥ii.

M. S. Six to eight drops to a wine glass of water morning and evening, or more frequently if necessary.

Or

Acidi Salicylici Partes, i.

Sodi Phosphatis, " iii.

Aqua Destillati, " xxx.

M. S. Use as a mouth-wash, morning and evening, or more frequently if necessary.

Or

Acidi Carbolici, gtt. xx.

Glycerini, ℥iv.

Aqua, ℥x.

M. S. Use as a gargle or mouth-wash, three or four times a day.

Those of the second class—to toughen and harden the gums, I employ principally the following:

Acidi Tannici, gr. x.

Tincturae Pyrethri, ℥ij.

Aqua Rosæ, ℥vi.

M. S. Use as a gargle or mouth-wash.

Or

Acidi Tannici, ℥ss.

Spiriti Vini Rectificati, ℥ss.

Aqua Camphoræ, f℥v.

M. S. Use as a mouth-wash.

Sometimes when I find a case does not yield as quickly as the indications would seem to point, I use on a pellet of cotton and apply to the pocket aromatic sulphuric acid. One case in particular which I treated several months since would not yield under ordinary treatment, and the aromatic sulphuric acid did the work after a few applications. *Y. C. U. T.*

PRESIDENT'S ADDRESS.*

BY DR. E. C. FRENCH, EAU CLAIRE, WIS.

I should feel myself the most unworthy of the unworthy did I not express to you my keen sense of appreciation of the great honor you have conferred upon me, in selecting me to preside over your deliberations during this twenty-second annual meeting of our society.

* Read before the Wisconsin State Dental Society.

Through the efficiency of your officers elect and committees appointed, we are able to present for your consideration, a programme which compares favorably with any previous programme in the history of this society.

It now remains with you, brethren, that the details of this programme be so carried out as to elicit the fullest discussion upon the several papers to be read and clinics given.

The precedent established at our last annual meeting of appointing all committees and essayists immediately at its close, has been productive of much good, and I would urge upon you the importance of so amending your by-laws that it shall be obligatory upon the part of the President, to so appoint all appointive committees and essayists, and that it shall be the duty of the Secretary to notify all appointees within sixty days after their appointment thereof; this gives your presiding officers ample time in which to appoint others in place of any who may refuse to serve.

We have within the borders of the State of Wisconsin, between four and five hundred regularly licensed practitioners, and this society having attained its majority, finds itself with the exceeding small membership of seventy; this is sufficient cause for us to reflect, and if possible, to ascertain the hindrances, which stand in the way of increasing our numbers and extending our influence for good. If the impression has gone forth that this society is one of mutual admiration and self-aggrandizement for a select few, the sooner this impression is dispelled, and this society placed in its true light, a beacon light held out to all who are seeking the portals of truth and advancement in the science of dentistry, the sooner we shall realize the objects for which this society was organized.

If Section 7 of the By-Laws requiring the Board of Examiners to prepare a list of sixty questions, seventy-five per cent of which shall be correctly answered by the applicant for admission to the society is a barrier in the way; then that section should be so amended, or a new section added, which shall designate the special branches in which the applicant shall be examined, and that any regularly licensed dentist under our State law, who may desire to become a member of this society, may at any time make application to the Secretary, and on the payment of two dollars and fifty cents, shall be entitled to receive from the Secretary the names of the several branches pertaining to dentistry in which the applicant shall be examined. And on the appli-

cant presenting himself before the Board of Examiners at the annual session, he shall be entitled to an examination in one-half of the branches prescribed by the society. Having passed a satisfactory examination, said applicant shall, on the payment of two dollars and fifty cents, be entitled to all the benefits, excepting the right to vote at said annual meeting at which he takes his examination; and at the succeeding annual meeting, said applicant on passing a satisfactory examination before the Board of Examiners on the remaining branches may, on the recommendation of a majority of the Board, by paying the regular annual dues, and signing the constitution become a member in regular standing.

A section in our by-laws covering the principal points of suggestion will, we think, do away with what many outside of the society look upon as a very objectionable feature, of having to come before the board wholly ignorant of the line of questioning on which they may be examined; further it will stimulate a course of reading that will serve a like benefit to the individual dentist, the public, and to the profession in general.

Believing that this society exists for something more than an organization, calculated to benefit its individual members, I would suggest for your consideration the importance and feasibility of organizing what may be known as the Wisconsin State Dental Society Scientists Course of Dental Reading; let this course of reading be for a period of two or more years and its privileges extended to all dentists within the border of the State, who shall conform to its rules and regulations. On the successful completion of the course the society shall issue a certificate of excellence, which certificate shall answer in lieu of an examination for admission to the State Society.

The time has come for this society to close its page of preface and begin writing the pages of history that shall mark a new era in its life and usefulness.

Let us "In honor preferring one another," build a superstructure that shall be worthy of the foundation our fathers laid, a number of whom are with us to-day to give aid and counsel.

OUR STATE DENTAL LAW.

After a period of seven years of criticism on the part of many dentists of our State, the law still remains upon our statute book, the benefit of which is apparent to every fair-minded dentist, while

the law may be defective in part, and the powers given the Board of Examiners somewhat limited, nevertheless it has had a very salutary effect in thinning the ranks of empirics and quacks who have heretofore flourished in our midst. The accusation that this law is a mere subterfuge and passed in the interests of dental colleges, is unjust and unworthy the dentist, who has at heart the best interests of his profession.

Many dental colleges chartered and run purely as business enterprises, have been somewhat benefited, nevertheless the tendency has been to elevate the standard and bring into line these questionable dental colleges. The law governing the practice of dentistry in our sister State, Minnesota, has the appearance of being somewhat arbitrary and unjust, but upon mature thought we are convinced that it strikes at the root of a gigantic evil which can only be obliterated by the passage of similar laws throughout the several States of the union.

DENTAL EDUCATION.

In these days of multiplicity of dental colleges, the rapid "grinding out" of full-fledged dentists, is subject matter proper to come before this society for discussion.

The practice of nearly, if not all, of our dental colleges of admitting students to their halls who have had no previous preparation and in the short space of two or three years turn out full-fledged dentists simply because they have passed through the college curriculum is an evil which should be corrected by organized effort on the part of all dental societies, insisting that all dental students entering college should have had at least two years previous preparation under a competent preceptor. This gives the student and his advisers ample time to ascertain his taste and ability for the practice of dentistry.

OUR LIBRARY.

Very little if anything is being done toward the building up of a permanent library. We desire to call your attention to the importance of this branch of our work that you make such annual appropriations as shall enable you to add yearly to this library the latest text-books and scientific publications on dentistry; also to fix a central location, elect a librarian, adopt by-laws to govern the loaning of books and periodicals to the members of this society.

The policy of this society should not be arbitrary on the one

hand or lowering of the standard on the other, but one of honest endeavor, embracing all the means at our command to encourage the spirit of earnest effort on the part of every dentist in the State to enter our ranks and help make this society the ideal one.

That we may attain this end let us so manifest the spirit of earnestness, push and regard for one another that all visiting dentists shall go away from this annual gathering impressed with a determination to become a member of the Wisconsin State Dental Society.

A TALK ABOUT TOOTHACHE.*

BY CHAS. C. CHITTENDEN, D. D. S., MADISON, WIS.

It is not my expectation or hope to present a single thing here to-day that is not thoroughly grounded and rooted in the inner consciousness of every well-informed dentist in the land. But men are so prone to forget that they do know, and so sometimes act as if they did not, that plain truths cannot too often be iterated and reiterated.

Toothache to the layman is conglomerately simple to understand (particularly if he has been there), and the remedy equally simple, "pull it out."

To us who are supposed to hold ourselves in readiness to cope with and control it, it assumes so many myriad phases and forms, that a lifetime devoted to the fathoming of its causes and overcoming or removing them, is all too short. To describe it is unnecessary—Webster's Dictionary does that. Our daily listening to descriptions of it by the victims, is as full of "infinite variety" as Mark Antony claimed that Cleopatra was. I propose to note the various causes of toothache, from sensitive dentine through to alveolar abscess, touching at the principal stages on the route, and making simple suggestions for immediate relief as we go.

Toothache results from many different causes, for example :

From living pulp in irritation from sensitive dentine to full exposure.

From congested pulp.

From dead and putrescent pulp.

From involvement of surrounding tissue by continuity and contiguity when poisonous gases in confinement force their way out of the roots.

* Read before the Wisconsin State Dental Society, 1892.

The first thing to do is to find out its cause and origin, and to locate and diagnose ; next to reach it, and then to control it by relieving nature of the disturbing influence.

The cause of facial neuralgia—*tic douloureux* toothache—whatever form of pain may be present, is frequently so hidden as to nearly baffle the closest inquiry. The safe rule is never to hit a head until you are pretty sure you see it. The patient may locate the pain in a superior lateral incisor, and if you diligently search, you are as likely as not to locate the cause in the lower third molar. Reflex manifestation is as misleading as a mirage, or a search for the "Earthly Paradise" unless you are fully up to its tricks.

Having located the trouble, it must be reached and fully discovered, to know its true character. It may prove a mere surface of inflamed dentine, with no real pulp involvement, in which case simply cleansing, stimulating with eugenol or creosote, and then perfectly covering with a cement, will command the situation until you are ready to make a permanent filling—always first having commanded the pain. It may transpire that a cavity reaches very nearly to the pulp chamber—so near that a turn of an excavator would expose the pulp. Then comes in play your best judgment as to what to do. The age, health, etc., of patient, general conditions of mouth and teeth are all to be considered. It is always best to make haste slowly though and do nothing you cannot undo. The first thing to accomplish is relief from pain. In this case, as in that of full exposure with hæmorrhage from pulp, a careful removal of débris, cleansing and drying of the cavity and application of a pledget of cotton dipped in eugenol and then touched in iodoform crystals and acetate of morphia powder, the whole placed in actual contact and sealed with bibulous paper saturated with sandarac varnish or chloro-percha without pressure, will bring your patient back next day happy and relieved, ready for whatever you may deem best to do further. Quick thermal changes are excellent helps in finding out "what's the matter." If colder temperature produces quick pain, the pulp is surely in full life, and the above mentioned conditions and course of treatment are indicated.

If, on the other hand, cold produces relief, and heat a welling-up or paroxysmal pain, you will diagnose at once a congested pulp, that is, one where the application of heat induces an increased flow of arterial blood into the pulp tissue which the capillaries are unable to handle and return promptly. This pressure of engorge-

ment produces paroxysmal pain, which will be relieved by quick wounding and bleeding of pulp, followed by the same dressing mentioned above. A stage further on, you will find—especially in teeth of more than one root—a portion of the pulp converted into pus, which, on uncovering and venting, will often enable you to see the heart pulsation welling through the opening of chamber, thus showing that a portion of the pulp further up the canals is still living. Depletion, cleansing and the same dressing before mentioned means relief to your patient. (Let me here remark that wherever I have used or may use the term *cleansing*, I mean the free use of $H_2 O_2$ with the Dunn syringe, as the simplest and most convenient vehicle I have yet found for liberating the oxygen where it is most needed to get in its work of purification.)

The next stage is where the tooth is sore and elongated, and pulp not very sensitive. On opening you will find a putrescent pulp, the gases generated from which have forced their way through the apical foramen, poisoning and inflaming the peridental membrane. To relieve, you have but to cleanse (that is, boil out with $H_2 O_2$ and dress canals lightly with phenol sodique, iodoform and morphia.) A little later, this case would present with swelling and soreness of the surrounding tissue, tending toward alveolar abscess. The same treatment with the additional use of stimulants and counterirritants to reestablish circulation on the mustard plaster principle, will give relief. In these cases the lancet is always a factor of resource to be held in great consideration, for it is often helpful in every stage of inflammation from its beginning to pus generation. If you use the knife, be sure to cut to *the spot* and to the very bone too. Oftentimes the cutting and venting of extravasated blood will abort an alveolar abscess.

When you find fluctuation and pus indications, get there with the bistoury, deep, sure, and quick. Applications of cloths wrung out of *het* water to the surrounding tissues after using the knife, is often very helpful.

Gentlemen, this subject is so very prolific and diffusive that any attempt to properly handle it in a paper is like trying to cover a ten acre lot by walking over it. I now leave the field for you to occupy.

PLASTICS.*

BY D. M. GALLIE, D. D. S., CHICAGO, ILL.

In presenting this paper to you to-night, I do not expect that I will be able to advance any new ideas or methods in the use and manipulation of plastics, nor do I expect that you will glean any new information from the reading of it, but I trust that the discussion which may follow will accomplish that which I have failed to make clear or bring before you.

The too free use of plastic material I consider has done a great deal to injure the profession of dentistry, for by its aid quacks and charlatans have been able to hoodwink and rob the public by plastering and puttying everything in the shape of a cavity, and finishing all by the name silver or bone fillings. The first of the plastics that I will dwell on will be amalgams, as I consider them the most satisfactory and deserving first consideration, and before finishing this paper will dwell briefly on the cements and gutta-percha. Copper amalgam I will pass by, for you have just listened to a paper on that material.

About the year 1820 a Frenchman presented to the then small class known as dentists an amalgam which was at that time called a mineral cement. It was used, abused and condemned by many operators at that time; in fact it gave poor satisfaction and it was only when Townsend and Flagg investigated the material, that any kind of perfection was attained, and the amalgam to-day is the result of their investigations and experiments.

Though amalgam cannot by any means be considered an ideal filling, it comes nearer filling the bill than any of the other plastics; it has its defects, but it possesses the good property of durability. True the unsightly margins and bulging surfaces after a few months wear cause a great many to cry it down and condemn it, but by proper amalgamation and manipulation which I will speak of later, a great improvement can be made in this direction. The discoloration of the tooth by this material is unfortunate and unsightly, but in order to preserve, amalgam must discolor, and the opinion is that it discolors and darkens in proportion as it preserves. This discoloration, which is caused by the deposit of metallic salts, which become insoluble, possesses therapeutic properties which

*Read before the Odontographic Society of Chicago.

preserve the tooth; and quite frequently we will find apparent leakage around a margin and no signs of new decay.

But I will say in regard to discoloration, that much improvement can be made by using the same precaution as is necessary to avoid bulging surfaces, and that is proper amalgamation of the filings and mercury.

A great many operators washed the amalgam after mixing, believing that by doing so less discoloration will follow, but this practice has fallen into disuse on account of the moisture that remained in the material, which many claimed caused more discoloration.

I will now speak of the spheroidal tendency which you all know is the most prominent defect of amalgam fillings. That the material becomes hard by crystallization of the mass and evaporation of mercury is known; hence it is necessary that the greatest care should be taken to have the proper proportions of amalgam and mercury. To do this a great many advocate the weighing of each, but such practice requires a great deal of time, more, I have no doubt, than many members of this Society can spare, and I think just as good results will follow the use of mortar and pestle. Pour the desired amount of filings into mortar and add a small quantity of mercury, mix well or rub well; if too dry add mercury until the mass is of proper plasticity. It is well to avoid the use of too much mercury, for when you squeeze this surplus out there is danger of losing a certain amount of the alloy, and if this is done your alloy will not be of proper proportions, and this also affects the crystallization and setting of the filling. Some operators claim that it is better to have the alloy that is used in the last one-fourth of a cavity a little drier than that used in the first three-fourths, for often we find when a large cavity is about three-fourths full there is visible on the surface quite an amount of surplus mercury; if the material for the last one-fourth is dryer we will have the surplus taken up. This I consider a good idea and, if followed carefully I think we would see fewer crevices around margins and bulging surfaces.

A great many of the failures with plastics can be attributed to the carelessness in preparing the cavities. Now I consider that in preparing a cavity for amalgam, the same care and thoroughness should be given as when the cavities are prepared for gold. First of all, I believe in using the rubber dam wherever it is possible, for

although amalgam is not affected by moisture to the same extent as gold, we all know that moisture is detrimental and entirely antagonistic to a good operation no matter what material we use.

In the preparation of grinding surface cavities we experience no trouble, but with some buccal and proximal cavities we do. All frail walls should be trimmed away, although not to the same extent as for gold, all decayed and softened dentine removed unless by doing so we endanger the pulp. In such a case it is advisable to allow sufficient substance to remain to cover the pulp. This should be carefully medicated with some of the medicinal agents used for disinfecting tooth structure; namely, the essential oils and then use a capping of cement or other nonconductor.

A cavity for this material should if possible be somewhat ball-shaped, but comparatively few cavities can be prepared in this manner. Still we can aim to have the wall form the segment of a circle by preparing a cavity, in this manner we will have it nearer the spheroidal shape required. All angles and straight walls should be rounded. By doing this we are less liable to have leakage. The enamel margins should be cut parallel; if beveled we will have weak filling margins for the edge strength of amalgam is poor.

We have from good authority the statement that amalgam fillings shorten through their long diameter and lengthen through their short. Therefore, in preparing a cavity we should strive to have the walls that embrace the short diameter as strong and well prepared as possible. If such practice is followed we will have fewer fillings fall out after a few months' wear. In the finishing of grinding surface cavities we should make the surface concave, in proximal cavities convex. This is necessary of course to save the interproximate space, but also necessary to insure a good filling.

Amalgam, when used as a filling, should if possible be kept out of sight. To do this we must limit its use to the molars and lower bicuspid. But quite frequently we are warranted in using it in upper bicuspid, when an amalgam can be well inserted, and be serviceable where a gold filling would fail, and we all remember the saying that a good amalgam is better than a poor gold filling.

The instruments best adapted for this filling are the smooth round headed, and flat or slightly convex burnisher. By their use the operator is more sure of thoroughly packing, and is more sure of getting better adaptation against the walls of the cavity. The careless habit of so many operators in finishing amalgams is very

conspicuous, a great many only using the burnisher at the time of insertion. All fillings should be finished around the gingival margins while the plastic is soft, and should be burnished down so that there is perfect articulation. Then a few days should elapse before they are ground and polished.

The cements, oxyphosphate and oxychloride, I use very little as permanent fillings. The fact of their solubility in the oral fluids make them filling materials that should be used with the greatest discretion. Of the two, oxyphosphate is the most durable. In a few cases we hear of its lasting a surprisingly long time. I found a few days ago in a large grinding surface cavity in a molar of a patient an oxyphosphate filling that had been in four years, and it showed very little signs of wear, only slightly cupped out on the surface. This was in a tooth of a child, and for such cases I consider it a good material, both for the filling of temporary teeth until the permanent ones show signs of erupting, and in the permanent teeth of children under fourteen years of age. Often the cements are of excellent use for the filling of frail anterior teeth of adults, whose teeth are too frail to fill with gold, and whose purse is too light for a crown. That its color is the most desirable of all filling materials we all know, and for this reason our brothers across in France are called upon to fill most anterior teeth of the ladies there with cement instead of gold, but there unlike America the material cuts no figure with the fee, as the charges are for the operation, not the material.

The cements are decidedly useful for what we will call inside work, such as strengthening tooth structure and frail walls, filling in large cavities that are to be finished with gold or amalgam and capping pulps, but when used alone its best place is in the teeth of children. It is absolutely necessary to have perfect dryness when filling with cement so that the rubber dam should be adjusted if possible, or an absorbent used to insure perfect dryness. Before inserting either oxyphosphate or chloride into a cavity when the pulp is nearly exposed, the covering should be varnished with something like copal, then a solution of chloroform to prevent the escharotic properties injuring the pulp. This precaution should especially be taken when using oxychloride.

In order to have any success with cement great care must be given to mixing. No doubt we have all had experience with a soft, sticky mixture, or a dry, crumbling mass. To avoid this we must

become accustomed to using right proportions of fluid and powder. Mix carefully with a slightly rounded spatula—an agate spatula is well recommended for this purpose—and when we have a substance that can be rolled between our fingers like putty it should be inserted into the cavity and manipulated rapidly as it sets very quickly.

The best method I have found for inserting cement is direct pressure, not the rubbing motion which we sometimes apply to amalgam. The filling should be kept dry for ten or fifteen minutes until thoroughly hard, then finished with strips or fine discs, and before removing dam, it is well to varnish lightly with sandarac.

Of gutta-percha I will say little, as its uses are quite limited. It is exceedingly useful as a temporary filling, and can be used to advantage in the teeth of children. It is nonconducting and non-irritating, two properties which especially recommend it. As gutta-percha has to be heated before using, and as the heat causes expansion, we have after cooling a leaky filling, and it is easily destroyed by force of mastication. I think the cause of so many failures with gutta-percha is that it is improperly heated. Instead of evenly heating the material, a great many operators pass it through the flame of a spirit lamp and burn it, thus destroying it.

There are a number of devices used for evenly heating this filling material, and if some of these are employed we will have better success. Some advocate the use of oiled instruments for inserting this filling, as it prevents the drawing away of the filling from the walls.

A nice finish can be obtained by burnishing surfaces and around margins lightly with chloroform. Of Hill's stopping and some other plastics I will say nothing, as they are worked quite similar to the ones I have spoken of.

DENTAL MEDICINES.—THEIR SPECIFIC ACTION AND WHEN INDICATED.*

BY EDGAR PALMER, D. D. S., LACROSSE, WIS.

The advanced, conservative position which the practice of Dental Surgery has assumed, brings dental therapy into an exalted place in the discursive elaboration of those fundamental truths

* Read before the Wisconsin State Dental Society, July 20, 1892.

which lay the foundation of success in this specialty of general medicine. I fear too many of us feel our way along in darkness, or put too much confidence in others' theories and notions to fit us for the scientific use of those agents we call medicines in our daily practice. I shall follow this line of thought in my short paper which I have the honor to present to you at this time.

No real cure of any disease can be effected, or any scientific application of remedies be made without a thorough knowledge of all the pathological conditions of the parts involved, or, in other words, the dentist who best understands the alphabet of molecular change induced by disease, will be the one who treats most successfully the impairment of functional activity, for he makes this knowledge the foundation for nominating changes to be produced, assisting nature by prescribing chemical substances in harmony with her laws, thus accelerating instead of retarding therapeutic service.

I find it impossible, in glancing at my subject, to go over but a small portion of the field which it embraces, and will confine my remarks to topical remedies, arranged in two groups, the first of which will be

OBTUNDERS AND LOCAL ANÆSTHETICS.

How to operate upon sensitive tooth structure without inflicting severe pain is certainly a subject which ought never to be considered out of place in our deliberations; for every one ought to realize that aside from sympathy for our patient there is method, reputation, and the success of our operation depending upon our ability to perform our duties without causing pain sufficient to delay or defeat our purpose.

The cases of sensitive dentine we have to contend with are very unlike, and are modified by so many conditions that it is difficult to postulate any method of treatment which shall prove effective as a specific.

Two methods, however, are always indicated in such practice. First,

BY OBTAINING AND RETAINING THE CONFIDENCE OF OUR PATIENTS, as the presence or absence of pain depends largely upon the mental act. A frank, simple statement of existing difficulties, and a kind word, timely spoken, will often do more than drugs toward re-

lieving us of what seemed to promise a painful, tedious operation.
Second,

BY THE EMPLOYMENT OF DRY HEAT.

Hot air lessens sensation by dehydration and contraction, and no matter whether there is suffering manifested by the patient or not, dehydration, as well as perfect sterilization of the cavity of decay is indicated.

The number of cases requiring the use of obtunders, other than this, I find very small in comparison. Obstinate cases, many of them due to systemic conditions, must be met with heroic treatment. For this purpose, it is my rule to select such agents as will cause the least suffering; but any drug powerful enough to cook albumen, or coagulate the protoplasmic contents of the tubuli, cannot be expected to be very gentle in its action. Some cases of erosion or chemical abrasion seem to defy our whole outfit of drugs and the best hypnotic skill we can command. For such cases a temporary filling of oxychloride of zinc sometimes bridges over the chasm and lets us escape.

Passing from this group to

ANTISEPTICS AND DISINFECTANTS,

we are confronted with numerous questions which must be settled by the physiologist or histologist before any of us can scientifically enter upon a line of treatment, or formulate a remedy. A patient comes to us with a tooth having a dead pulp, and we cleanse the chamber and apply an antiseptic. How do we know that tooth is in a septic condition? We don't. If we find a tooth tender to the touch, giving off a putrefactive odor or weeping tears of pus from a local abscess, we are safe in saying these advanced stages indicate a septic condition; but we all know these extreme cases do not form the bulk of those demanding our skill. You will say that the process of the destruction of tissue predisposes the presence of putrefactive organisms. The first stage of the putrefactive process is simply a stage of fermentation, and comes without odor. This stage of fermentation may or may not be produced by the action of microorganisms, and it would be simply absurd to medicate, using the same drug in this stage of fermentation as indicated for septic and putrefactive conditions. So that in the treatment of devitalized or pulpless teeth, we should be exhibiting culpable ignorance if we did not recognize these different stages of

putrefaction in forming our diagnosis of the pathological conditions in our endeavor to apply a correct line of treatment.

Our *materia medica* is full to overflowing with remedies for every stage of this putrefactive process, and I will not epitomize the well-known list. Supposed discoveries in the science of pathology, and improvements in the art of applying remedies illuminate the pages of journals wherever some of our prolific writers upon these subjects find space for their new-born fantasy, and I shall not attempt to cast any shadow of disappointment upon their factitious light by applying the crucial test of my own experience. So many agents are good, and so many efficacious in your hands if not in mine, that I hope your discussion of this subject will reveal the best.

The fact has long since been recognized in general surgery, that "life is the great antiseptic," that it is not the wound that requires treatment, but its secretions. In our practice it is not the tooth with a dead pulp which requires treatment; but the different stages of pyogenic inflammation existing in the surrounding tissues from septic contagion with the putrefactive contents of the pulp chamber. We assist nature to restore health or forestall such derangements by cleansing the tooth of its foulness and making the parts surgically clean, or, as ordinarily termed, aseptic. This accomplished, there is usually little else required but protection and rest—that kind of rest which is twin brother to cleanliness and godliness in the restoration of healthy function.

One point I wish to emphasize parenthetically, namely, in the treatment of pulpless teeth in any stage of the fermentative process, exclude the saliva.

The pathologist sterilizes his culture tube, plugs it with cotton wool to keep his culture free from the contact of atmospheric putrefactive germs. In like manner ought the dentist who has driven out the germs from the surfaces under treatment and is trying to sterilize the soil, take precaution to shut out the putrefactive germs contained in saliva, which is capable of supplying microorganisms much faster than any death dealing agent can destroy them.

In conclusion, I hope I have made it plain that I have no hobby to ride, but simply plead for a higher, more scientific, as well as practical application of well-known truths illustrating the lesson which meets us at every turn—that the teeth and their pathologi-

cal states sustain such intimate relations to all portions of the body that a demand is made upon us for a wider knowledge and more careful training in general pathology as well as *materia medica*, and emphasizing the fact that unless we recognize this interdependence of the teeth to the pathological conditions of other organs and tissues, and are made to understand these fine affinities which should exist between the medicines we use and the tissues to be dealt with, we are prescribing carelessly if not empirically, and need some gentle reminder to make us realize that we are not doing ourselves justice or our patients the greatest service.

PROCEEDINGS OF SOCIETIES.

CHICAGO DENTAL SOCIETY.

Regular meeting July 12, 1892, Dr. J. W. Wassall, President, in the chair.

Dr. E. A. Royce read a paper entitled "Filling with Crystal Gold on the Surface of Amalgam."

The President called upon Dr. A. W. Freeman to open the discussion. Dr. Freeman said: I might say for once in this Society you have taken me by surprise. I had no intimation that I should be called upon to open the discussion on this subject, as I have had very little experience with this method of making fillings. I therefore hardly know what to say. I feel that I cannot advise you as a good adviser. I should first like to see the specimens and then judge in regard to the work. I would say, that I am always willing to try anything and everything that I think will save a tooth. I have always made it a practice of buying things at considerable expense oftentimes and sometimes have found them of very little good. If we can judge a thing by its looks, I should think the specimen we have here might be very good. I have put in perhaps ten or twenty of these fillings, and they have extended over a period of four or five years. I have never used all crystal gold. I have used Steurer's gold, but did not have first rate success with it, and I have not had perfect success with crystal gold as I should judge our friend has by his specimens. I have taken cases where I could hardly make a gold filling and have veneered the surfaces of them, and they remained quite well. I have oftentimes mingled with that a little phosphate, and I am looking

for results from those fillings. I cannot say that I have had enough experience to recommend the use of phosphate and amalgam highly, but I have had enough experience to recommend it as a fairly good thing. I believe that it is better than all phosphate from my limited experience with it. I am here to gain knowledge, and not to impart much on this subject.

DR. J. G. REID: Mr. President, I do not think I have very much to say on this subject. I have patched a few gold fillings with amalgam, or at least tried to, but have never had very much success with them. If I had taken the fillings out and filled the cavities anew, I perhaps would have been better off.

I attempted once to put in a gold and amalgam filling, and I got it about half way in, then it all squeezed out and I quit. I went back to gold and tin, and finally filled it satisfactorily. I do not see that there is any particular advantage gained using an amalgam filling over tin and gold. I believe a tin and gold filling combined will produce equally as good a result. I am not saying this from experience, because I am not experienced in the use of amalgam as Dr. Royce uses it. The amalgam filling I attempted to cover with foil, I expect was a miserable failure, but it would not have been a success anyway. It looks well. I think the crystal gold combined with amalgam will look better than the foil, and I use crystalloid gold entirely, and have for years, and have not used anything else. I do not know whether crystalloid gold works with it nicely or not. It seems to me crystalloid gold would not work as well as Watt's crystal gold.

The specimen that has been passed around is very good indeed. All fillings look well out of the mouth. The only way to see them is in the mouth after they have been in two or three years. I should say it will expedite some fillings very materially, but not any more so than with tin and gold in combination. I have great confidence in this combination and always have had. They fail sometimes just as any other filling, but that is not the question before the society. It is the question of amalgam and gold. I cannot speak on this subject from a practical standpoint. I have never put in one of these fillings in my life, and have never seen one put in as recommended by Dr. Royce, that is, the filling being started on soft amalgam.

DR. C. P. PREYN: Unfortunately I did not hear all of the paper. I think I heard enough of it to get an idea of what the essay-

ist intended to say. I have heard him talk on a previous occasion on this subject. I have tried in one or two instances to carry out the ideas that he has advanced, but I have not succeeded for some reason. I do not know just why I have been unsuccessful, but I have failed to make the gold work. I have failed to get the gold to thoroughly unite with the amalgam, and it became a mixed up mass and did not work well in my inexperienced hands. The other method, the mechanical union of gold and amalgam, is one that has interested me considerably, but I think perhaps that is foreign to the subject of the paper. If it is not, I might talk a little on it, I am a thorough believer in gold and amalgam. I have practiced this method in many cases ever since I commenced to practice, putting amalgam in at one sitting, and at a subsequent occasion putting on gold. Where this is done there is rapid oxidation of the amalgam, so that it becomes black like copper amalgam, and the gold remains bright and clear, and if proper pains are taken the amalgam filling is quite as good as with gold. In the worst cases, where you use such a combination, you preserve the teeth better than with either one of the metals alone. This is my belief founded on fifteen or eighteen years' experience. Doubtless many of you have seen cases that have been in my hands in former years; they have drifted into your hands. You may have seen these operations. If you have not, I would like to show them to you. Take the class of teeth spoken about so persistently a few years since by Drs. Chase and Palmer, below the average in quality, they could not stand well with metal alone. If you take this combination you will have better results with it, I think, than with any other one method that can be used. The curse that was heaped upon amalgam ought not to have been upon amalgam *per se*, but upon the slovenly way in which it has been used. It is a good filling material for saving teeth. There is none better if it is used as it should be. If any of you have never filled a glass tube with amalgam, do it, with paper wrapped around it, then take the paper off and see the imperfections in the filling unless ordinary care has been used. The practitioner will see air spaces where he thought the amalgam was in complete apposition. It takes no longer to fill a tooth with amalgam now than it did fifteen years ago. I have found that it needs time, it cannot be done as we were instructed to do it years ago. It cannot be done slovenly; we must use just as much care and thoroughness as with any other material, and I don't know

but more. Then, we have with it a peculiar electrical condition of things that will destroy the microbes that produce decay. Amalgam does its best work at the cervical margin ; gold does its poorest work at the cervical margin. Amalgam does its poorest work upon crown surfaces or angles ; gold does its best work there. Take a large cavity in the distal surface of a second molar, fill it with amalgam, but with no attenuated edges. The cavity must be prepared differently for gold. We must have good, sharp, square cut walls, otherwise the attenuated walls would be chipped down and break off. We must have a beveled surface, there you use gold to advantage, using these two metals only. Where you use one at its strongest point and where it does its best work, you do your patient better service than if you attempt to use gold altogether. When I do work of this kind, I do not propose to put in such fillings for \$1.50 or \$3.00. If necessary, I charge \$10.00 ; I charge the patient for time. If you are doing your patients a service with amalgam that you could not do for them with gold, charge them for it just as though you were using gold.

DR. J. H. WOOLLEY : In using a combination of amalgam and gold, do you fill with gold before the amalgam sets ?

DR. PRUYN : I do not. I have never advocated that system. It does not seem to me that it is as practical, when done on mechanical and philosophical principles, as the other ; still the essayist has shown from his experience that it is satisfactory in his hands.

DR. A. E. MATTESON : I cannot say that I have had a great deal of experience with amalgam and gold as a filling material. I am firmly convinced that amalgam is a good thing, and that gold is a good thing. I have seen some very poor results from the use of amalgam and gold in combination from the best operators in the country. I have used amalgam and gold in combination frequently in repairing cervical margins, and I have had very good results following the use of them in that way. The great trouble with the use of amalgam is, in my experience, due to a lack of proper manipulation. I doubt if twenty five per cent of practitioners who are using amalgam use it as it ought to be used. They do not follow the directions. They have not the combination that was originally made, because they make amalgam and press out parts of the alloy with the mercury in excess. It is all wrong. If the combination is correct it should be there and the mercury should be in proportion as it forms the mass. If there is

too much mercury, add more alloy, and *vice versa*. I believe that a great majority of the failures are from a lack of manipulation. I have occasionally filled cavities (proximal) with the first half of amalgam, and gold for the remainder, for a number of years, allowing the amalgam to remain two or three days, then polishing and finishing it, then building over it with gold. I believe that there is chemical union after it has been allowed to set.

DR. A. W. HARLAN: I listened very attentively and carefully to Dr. Royce's paper, and his ideas on the subject are very explicit. He says in a certain class of cases he mixes amalgam dry and uses a matrix, packs the amalgam between the cavity wall and matrix nearly up to the edge of it and adds crystal gold until there is perfect union, then he fills the tooth with gold. That is very plain, and I believe I will try it. I have filled a great many teeth by introducing amalgam first, then cutting out the next day or at some other period, a sufficient quantity and welding on with gold. I think it is justifiable practice, but not always. I tell the patient what I do it for. I have had very good results from operations of this kind, but to say that it should become a general practice would be far from what I mean. It is adapted for a certain class of cases where it is impossible to make a good firm joint between the gold and tooth structure on account of the difficulty of reaching it with gold, so that it can be thoroughly packed, and the class of teeth where there is still greater difficulty in making a perfect edge out of the quality of the material. This other method, it seems to me, is preferable to the one I have practiced. I shall try it. Anything that will help to save a tooth is worthy of trial, and this seems to offer a new line for experiment. You do not need to make many of these fillings before you find out what the result will be, and if it is satisfactory it will become an accepted mode of practice.

DR. R. B. TULLER: My first experience in trying the method of filling outlined by Dr. Royce was a little peculiar. I heard him describe his method on a previous occasion, and the first opportunity I had I tried it. I put in my amalgam at the cervical margin, filled up about one-third, and commenced packing in Watt's crystal gold, and as I was packing that in I was knocking out the amalgam until I finally found the cavity was filled entirely with gold. That experience taught me that the matrix was an essential feature, and since that I have tried it in several cases where it has given me a great deal of satisfaction; but whether it will stand

the test of time we will have to wait and see. It has been so satisfactory to me in a certain class of cases, as described by Dr. Royce, that I shall try it I think whenever such cases present; but I am an advocate of gold wherever I can use it and make a filling that will do what we aim to do—preserve the teeth. There are some cervical borders where the best and most skillful gold workers in the profession could not, in my estimation, make as good a gold filling as could be done with amalgam.

DR. GEO. J. DENNIS: I have had no experience in this line, but I have had the opportunity of seeing several of Dr. Royce's fillings that have been in four or five years, and all of them seem to preserve the teeth, with the exception that the walls of the teeth were frail, they were split off, leaving the gold and amalgam exposed from the crowns of the teeth to the cervical border. When I looked at the tooth, it seemed to me the wall had broken down, or the tooth had split off because of the expansion of the metal. Whether that was true or not I cannot positively say. There appeared to be a chemical union between the two metals, the gold and amalgam. The amalgam was pitted on its surface. The proximal surface was also pitted to a certain extent on the surface next to the tooth wall. The only objection I have to the use of amalgam is, that there is an unequal degree of expansion or shrinkage in the case of the gold; that is, if very much mercury is used in the amalgam it takes up considerable gold. In the case in which the wall was split off the cervical border was perfectly preserved.

DR. J. N. CROUSE: I have not had much experience with a combination of amalgam and gold, except as I have observed them in the mouths of patients, or where a gold filling had been put in and somebody put amalgam in and patched it up. I had a mouth of that kind to-day with eight or ten amalgam fillings combined, in different teeth. From the hands the cases were in, I know why amalgam was in the teeth. In one or two instances I have gouged out some portions of amalgam fillings and added gold rather than take out all the amalgam. It is a kind of operation that I should regret to see highly recommended to beginners or practitioners in middle life or old age. It tends, I think, to slovenliness. You can put an amalgam filling in a tooth where it is not half prepared and have it look well, and the chances are that if you operate with amalgam you will not properly prepare the cavity, whereas you would if you used gold. It has a tendency also, in my opinion, to

take away the enthusiasm of the operator, that influence that every good operator must have and that fills him with encouragement, when he has done a good piece of work. When a dentist has performed a good operation he looks upon it with pleasure. One of the fascinations of operative dentistry is the beauty and perfection the operator sees after he has made a great effort. It is not only true of dentistry, but it is true of everything in which a man succeeds.

What can be the advantages of amalgam and gold combined? It has been said that it has an additional influence in that it destroys microbes. That is a very indefinite proposition. If there is anything in a combination of mercury and tin, platinum and copper fillings, of amalgam and gold, I should think it would be used exclusively for the destruction of microbes. Personally I have very little faith in such a theory or that kind of recommendation. The only good ground for the use of this combination is where the cavity passes so high up that it is impossible to get the dam above the cervical margin without inflicting a great amount of torture to the patient. You can pack amalgam quicker, and the very small amount of moisture that comes in contact with it and the cervical margin will not interfere with the operation. I can see how that can be done with credit and success. Generally speaking, if the practitioners of dentistry would practice the old and first method that had merit in it, which is packing soft cylinders of noncohesive gold, they would have an operation that is more perfect as to the safety of a tooth, consume very little more time, and would have that influence that shows when you are through that you have accomplished the object that you started out to accomplish. Show me any college that teaches its pupils how to pack soft cylinders of noncohesive gold, and I would like to have a photograph of it. If there is one in this country that does it, I do not know where it is. It requires good judgment and self-collection to do it. You cannot pack noncohesive cylinders and talk; you have got to have your mind on the work. If there is any better way of filling teeth than that I want to see it.

If I understood the essayist correctly, one of his reasons why amalgam is better, was, that the packing of gold took away the excess of mercury, etc. I want to say that teeth can be saved in the way described by the author of the paper, but where are the advantages? Is it better than gold? I challenge that proposition

to any kind of test that may be brought out. If you are going to use amalgam in connection with gold, I would recommend its use in large cervical cavities where decay has taken place beyond, and in order to fill such teeth with gold properly you have got a good deal to do. It would be justifiable to pack gold with amalgam in such places. I have performed this operation, I have gouged out gold away up under the margin of the gum, and have patched it with amalgam or gutta-percha. I do not know which is the better of the two, but I should say gutta-percha.

DR. C. F. HARTT: I believe most of the gentlemen who have spoken to-night are away off. I have given up entirely the filling of large cavities with metal of any kind. A tooth of good structure should be filled with gold, and teeth below the average should be filled with cement. If we want something to hold the outside walls of the cavity together, fill the teeth with cement, then cut out say the sixteenth or eighteenth of an inch all around up to the enamel margin, and have a smooth, clean cut margin wherever the enamel and cement come together. Fill that full with gold. You cannot get up there with cylinders, a spongy mass like that. You make a little retaining point or groove, you can fill it with cement, and you will be astonished how little gold is necessary to spread over the surface to protect the cement. It is a mistake to fill teeth with metal of any kind. Cement is the thing, then pack over it anything you want to that is durable.

DR. E. A. ROYCE: One of the first objections that I expected to hear has not been spoken of, that is the liability to mistake the color given by the amalgam at the gum margin, for decay. This may be obviated by allowing the amalgam to extend farther down upon the lingual aspect of the tooth so it is plainly visible.

In regard to noncohesive gold, I think that since I have been in Chicago, I have given more clinics to demonstrate its use, than any other man in the city. I have at the present time under observation a number of cases where the compound proximate cavities of molars and bicuspidis are built up entirely of noncohesive gold, the contour is such as to give fairly good points of contact, and the fillings are doing good service. I use the combination of tin and gold for a large class of cases, and am perfectly satisfied with it in its place.

Gold and amalgam should not take the place of gold. The best operators in the country are losing gold fillings every day, not

entirely because of faulty manipulation, but in a great degree because of galvanic action. In the combination the amalgam will oxidize rapidly, stop the current, stop any minute openings, and in that way assist in saving the tooth. I do not attempt to save time by its use but save the tooth that is below grade.

Crystal gold acts so nicely with mercury because it is manufactured by making a gold amalgam, and the mercury is then removed by acids, leaving the gold to be prepared for market.

ADDRESS OF MR. H. C. QUINBY, L.D.S.I., RETIRING PRESIDENT OF
THE BRITISH DENTAL ASSOCIATION.

INAUGURAL ADDRESS BY MR. H. C. QUINBY, L.D.S.I.

Mr. Quinby thanked the Association for the position in which they had placed him, and he did so, he said, all the more because he believed that while conferring the highest honor in their gift upon him they intended to reflect honor upon the type of American dentistry which was so well represented on this side of the Atlantic when he came to England early in the first decade of the second half of the century which was now drawing to a close. While there were some features in the present aspect of what was called American dentistry which American dentists were not proud of, he was sure there would be a general feeling of pride in the fact that on the first occasion on which the members of that Association had seen fit to elect an alien to occupy the Presidential chair the choice had fallen on an American. Proceeding to point to some of the causes of the change that had taken place in the estimation in which American practice was held now compared with what it was forty years ago, he said he wished to speak of some of the phases of what he must call unprofessional conduct which had brought discredit upon American dentists at home and abroad—discredit which was deeply felt by all earnest, conscientious members of the profession in America. Before doing so, however, he desired to remind the meeting of the immense strides which English dentists had made in scientific conservative practice in the four decades to which he had alluded. There was no profession without its camp followers, a parasitic class which never by any chance reflected credit upon the professional prestige and dignity. That class would always be found hanging upon the rear of the main army, ready to pick up such crumbs of

emolument as it might be able to seize, and would not have any scruples about carrying off the whole loaf if circumstances should permit. Living in a state of warfare against their own kind, as well as against the community, they naturally acquire a certain sharpness of intellect which, with a limited knowledge of technique, made it possible for them to impose upon the credulous and ignorant. Another class not much more creditable, having obtained what appeared to be a legal right to a place in the ranks, but lacking the true professional feeling, drifted away into practices which no man of standing would countenance. Some of that class had no capacity to govern themselves, and fell into the hands of those unscrupulous practitioners who were always on the watch for opportunities to make use of brains which had been able to gain a qualification but were not regulated by that moral rectitude which was so necessary to keep ability in straight paths. Such men soon lost their self-respect (which might, under wholesome direction, serve in the place of honorable principle) and rapidly degenerated into mere hacks in the team of quackery and charlatanism. There was also too much reason to think that a traffic in illegitimate diplomas had been recently revived, if indeed it had ever ceased to exist within the last thirty years, and those, which were purely a matter of purchase, without the too troublesome formality of examination, and which would be useless to a respectable practitioner, were made to pass as current coin for advertising purposes, where genuineness was not considered essential. It was also much to be regretted that the decision arrived at by the assembled faculties of the American dental colleges to the effect that no diplomas should be granted *in absentia* or without full compliance with the specified curriculum had not been so religiously adhered to as it might have been. It was reported that even an honorary degree granted by the oldest dental college in America (though why an honorary degree nobody could understand) had been used in the most unscrupulous manner for advertising purposes both in the public papers and by circular. The restrictions on registration should be such as to prevent the great mass of those men from practicing on their own account in this country, but an evasion of that part of the Dentists Act by means of a system called "covering" had been for some time rather extensively carried on by certain men who were not eligible for membership of that association. Under that system, which was manifestly contrary to the spirit of the act, he was given

to understand that numbers of young Americans possessing qualifications, or what appeared to be such, and which had been advertised as American qualifications, even giving the names of the persons supposed to be so qualified, were employed in dental practice, although none of them were registered, that want being covered by the sole registration of their employer or manager. Certainly none but those who were totally destitute of all the instinctive aspirations which elevated and ennobled the professional life could engage in a system of practice which involved advertising in the public newspapers.

It was a well recognized principle in the liberal professions that advertising barred from membership of all professional societies and associations those who made use of such public announcement of themselves and the advantages they claimed to be able to give their patients or clients; in short, it simply meant professional ostracism, and it was quite time that the public should know that, and be able to judge whether men who had forfeited, or never obtained, professional recognition were to be trusted to perform professional duties. They could not, however, ignore the fact that at present the constant reiteration of a phrase or a statement did make an impression on a very credulous portion of the public, and it appeared to be just now the policy of those advertising institutions to keep a certain phrase constantly before the public eye, and to convey the idea that it was essentially an American class of work, whence arose the necessity that the employes should be Americans to give some appearance of consistency to the deception. He alluded to the stock phrase "crown, bar, and bridge work" as being the latest form of imposition upon that portion of the public which took its ideas of dentistry from advertisements. It was evidently intended to suggest a new development of dental science, by which any broken down and hopeless antiquities in the mouth might be restored to permanent usefulness and beauty. (Laughter.) They knew what utter nonsense that was; that in reality the phrase meant little that was new in dental practice. Another subject which had sorely exercised the minds of their American colleagues of late had been the ethical effect upon professional character and standing of the taking out of patents on ideas and methods which were purely professional in their application. He thought they might admit that the Americans were an inventive people, and that the great facilities given by the United

States Government for the procuring of patent rights had done much to develop and stimulate that talent. It was the purpose of the statesman who framed the patent laws that they should have the effect of encouraging a talent which the American colonists inherited from their British ancestors, but which had thriven well from the necessity which made men who were placed in new surroundings where additional labor was unattainable, think out and contrive ways and means to increase the capabilities of their own hands. In the case of surgical appliances there did not appear to have been to any noticeable extent, if at all, any reservation of rights by the inventor; the ideas, the methods, and the means for working them out had been freely and fully explained and illustrated in the professional journals, and the instrument makers had loyally exercised their best skill to perfect the instruments suggested by the surgeon, who in due time received and was satisfied with the approval and thanks of his colleagues. He was sorry to say, however, that that had not been the case in too many instances with the instruments and preparations for the use of their branch of surgery in America. In confirmation of that statement, he pointed to the buying of royalties upon the use of vulcanite for dental purposes in America, and to the selling, by men claiming a professional standing, of patents taken out by them to the large manufacturing companies who made and prepared instruments and materials for dental surgery. Those were, he believed, some of the reasons why the word American, used as a prefix to dentistry, constituted almost a term of reproach, for on this side of the Atlantic it had become, he was sorry to say, synonymous with the veriest chicanery and humbug; but America had not ceased, and he hoped would never cease, to produce dentists that were honorable men, and who would cordially agree with the sentiments of a late letter in the *Times* by a distinguished member of that association, who said, "Dentistry, like medicine and surgery, is catholic, and is practiced by honest men for the public good, and therefore all its methods are made public to all members of the profession." A professional man, by the act of adopting a profession and qualifying himself to practice it waived the right, morally, to keep to himself for his own profit, any knowledge which would benefit his professional colleagues and help them to be more useful to their patients. He meant that if the idea of some new operation, or of some improved means of performing an operation,

occurred to a man, it was only a matter of duty to make it known to his colleagues as soon as possible after verifying its value. They had what they considered to be more than their fair share of charlatanism in this country, but they could not be too thankful that they did not find it in their associations and scientific societies. Their numbers, actuated by the true spirit of professional life, were ready to give freely their contributions to professional knowledge, while fully conscious that, however much they might give, it was but an atom in comparison with the much they had received. So long as respect, esteem—they might say brotherhood—could be maintained in their association and societies they might take it for granted that they should have no claims made by their own members for patents; but they must take care that as few such claims as possible were established by those who chose to stand aloof from their association and those others whose unprofessional practices rendered them ineligible for any association, in the broad sense of the word. Commenting upon the address of his predecessor in London last year, an exposition of the etiology of tooth deterioration, in which he entirely concurred, he said they went too far back in many things, and made the fathers accountable for their children's sins. But if they would correct the faulty structure of the children's teeth, if they would supply them with the proper materials in a form to be properly assimilated for the building up and nourishing of their teeth, they must go far back as the mothers, or rather they must teach the mothers of the coming generations how it must be done. The feeding must begin before the child was born; and it must continue with watchfulness and discriminating judgment through infancy, childhood and adolescence. That that should be intelligently and effectively done it was necessary that every dentist should be a teacher, and endeavor as far as possible, to disseminate information on all possible occasions. They were doubtless all aware (certainly those who had had much experience were) that attempting to teach men and women to do or to leave undone such things as might give trouble or interfere to some extent with their comforts or their pleasures would be a thankless task in most cases, but when they sowed good seed broadcast some of it would fall on good ground. There were many mothers who were so sincerely anxious for their children's good that they would listen to teaching about present care for the future good of their teeth, and

would try to act upon the instruction which was given them, if they believed in the teacher, even when it did not in all respects conform with what was taught by their grandmothers. It was to those who wished to learn that they must look with some degree of hopefulness for a beginning of improvement in the structure and preservation of children's teeth, always remembering that in preserving these they were taking care of the adult teeth. Their work was to advise, to prevent, to repair, to restore. Immediate results were not what they should chiefly look for. The future effect of what they did in the mouth should be the idea ever foremost in their minds. (Applause.)

The thanks of the association were accorded to the President for his address.

The seventh annual meeting of the Southern Illinois Dental Society will be held at Mt. Vernon, Tuesday, Wednesday, Thursday, Oct. 18, 19, 20, 1892. The following clinics have been arranged for :

T. W. Pritchett, White Hall—"Pulp Canal Filling."

G. A. McMillan, Alton—"Making and Adjusting a Bridge before the Society."

B. B. Tatman, Mt. Vernon—"Bicuspid Crown, Porcelain Face."

A. R. Rainey, Centralia—"Extracting Teeth Without Pain by Local Application."

I. G. Dickson, McLeansboro—"Extracting Pulp Without Pain, and Immediate Filling."

J. J. Jennelle, Cairo—"Soft Gold Filling."

W. N. Morrison, St. Louis—"Open Face Crowns."

C. B. Rholand, Alton—"Making and Demonstrating the Crown."

N. H. Jackson, Greenville—"Compound Gold Filling."

R. H. Canine, East St. Louis—"Plastic Filling, Administering Nitrous Oxid Gas."

T. L. Phillips, Nashville, will illustrate his mode of Articulating Full Upper and Lower Set of Teeth.

SUBJECTS FOR DISCUSSION.

L. Betts, DuQuoin—"Local Anæsthesia." Discussion opened by H. E. Van Allen, Carlyle.

L. B. Torrence, Chester—"Inflammation." Discussion opened by W. N. Morrison, St. Louis.

G. A. McMillan, Alton—"Odds and Ends of Daily Practice." Discussion opened by Simon Willart, Mound City.

J. E. Entsminger, Murphysboro—"Dental Medicine." Discussion opened by L. T. Phillips, Nashville.

L. E. Gordon, Chester—"Treatment of Deciduous Teeth." Discussion opened by A. R. Rainey, Centralia.

J. G. Harper, St. Louis—"Electricity in Dentistry." Discussion opened by H. M. Prickett, Springfield.

THE DENTAL REVIEW.

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DENTAL STUDENTS.

The freshmen in our colleges at the present time will need a little preliminary instruction from what they have had in the past. It seems to us that the establishment of recitations on different subjects that are taught, will more thoroughly ground them in the elementary branches than to place the whole of the teaching on the system of didactic instruction so generally pursued in recent years. If a class is compelled to recite once per week in chemistry, physiology, anatomy, materia medica, dental anatomy and mechanical dentistry—say five or ten pages per lesson—with a competent quiz master, the members will soon be stimulated to bend their energies to the mastery of a subject. When such students are afterward lectured to by the teacher they will have a better understanding of the subject than to enter the class room without previous preparation. The practical work in chemical and histological laboratories will be better comprehended and better work will be done. The subjects named are not arbitrary; in fact, too many subjects may have been named, but the idea of a fixed recitation will entail on the student the necessity for a definite amount of reading. Too few of our students are thoroughly well equipped in first principles, and if such methods of instruction are undertaken we believe that the classes will show a more marked appreciation of such subjects at a later period.

This need not interfere with practical work in the mechan-

ical laboratory or the technic room. In addition to storing up useful knowledge the student will have less leisure time to be frittered away in the aimless pursuit of matters not beneficial to his future welfare. We hope to see the experiment tried systematically.

A CORRECTION THAT DOES NOT CORRECT.

The learned editor of *The Dental Practitioner and Advertiser* in his October issue corrects the prescription of the erudite Miller, published in the July number. What must be his "feelinks" when he discovers that arseniosi is spelled "cosi," which makes us to remark that the sympathy of a brother in distress goes out to him in his hour of trial. But there is a bright outlook ahead—the thought that the proof reader will once more have to wrestle with his manuscript should sustain him; he will get at him again—say in January or even in December's dark days. That's the way we punish 'em. No holiday gifts will efface the hours of anguish spent in trying to decipher *his* hieroglyphics—nor ours for that matter.

REVIEWS AND ABSTRACTS.

EXTRACTS FROM AN ADDRESS BEFORE THE MASSACHUSETTS STATE DENTAL SOCIETY.

BY L. D. SHEPARD, D. M. D., BOSTON, MASS.

Mr. President and Members of the Massachusetts Dental Society:

Over a score of years ago I had the honor to deliver the annual address before this society. I chose as my subject Professional Fidelity, which I treated in its three relationships of fidelity to patients, to the profession and to one's self.

On the present occasion my invitation to address you is coupled with the assignment by your executive committee of a subject, namely, "What changes are necessary to make the Massachusetts Dental Society more efficient as a State Society and more thoroughly representative of the whole profession of the State."

I must assume that the honor of this second choice and the circumscribing of my efforts to a stated subject presupposes that from my long experience in dental society work I may be sufficiently fa-

miliar with the past history and present conditions of the society and the profession as to be able, in a measure, to assist in pointing out the way by which the fact, which we must conclude is a fact from the giving to me of the subject, shall cease to be a fact. In additional proof that the society is not as efficient and representative as it should be to hold the position of the Chartered State Society, I need only to remind you that it has to-day enrolled on its list of membership only about eleven per cent of the legal practitioners of the State, and also more instructive and discouraging, that a larger body, about fourteen per cent of the profession, have been members but are not now, having withdrawn or been dropped. It will be my aim with as little superfluous language and as plainly as possible to try to answer why this is so and to suggest some of the remedies.

The first and principle cause of the failure of the society to have been in the past or to be at present what its name implies, a State Society, will be readily apparent from a study of the history of the last three decades.

Thirty years ago there was no dental society in New England. I think one or more had been organized before that date, but practically the statement is correct. In fact, throughout the country the societies were few in number. It was just at the dawn of the grand society rising which has brought so much light and life into our body. The societies and colleges mutually reacting jointly merit the credit for the marvelous progress since that date. The dentist of that day was generally a poorly educated man. Here and there a graduate in medicine or in dentistry might be seen, but the great mass were graduates only from the laboratory and office of a practical, frequently ignorant, dentist. I need not enlarge upon this point. It can be verified by many still among us who remember the darkness of that hour just before the dawn, and by referring to the many addresses and reminiscences which may be found in the magazines.

It is rather singular that almost simultaneously three large and pretentious societies, still flourishing, were organized in Massachusetts. The Merrimac Valley, now called the New England, was started in Lowell in May, 1863. The Connecticut Valley, in Springfield, in November of the same year, and the Massachusetts Dental Society in Boston a few months later, March 4, 1864. These three societies were started almost exclusively by three different sets of

men, and naturally at the beginning, and for some years, covered the three sections of the State, the northeastern, the western and Boston and vicinity. The removals of men from place to place, especially the promotion of the more ambitious and successful from the country towns to the cities and the activity of the leaders in educational matters has caused, in more recent years, many to become members and active workers in two or even all of these societies. Another factor which for a time restricted our society was the holding of monthly meetings in the evening in Boston, while the two other societies held semiannual meetings of one or more days' continuance.

It is a pleasant fact that these three societies have always dwelled together in peace and harmony, frequently holding joint meetings, with no friction or jealousies and only that rivalry which is to be commended, of which should do the better work for self-improvement and the advancement of the whole profession.

As one of the founders of the Connecticut Valley and a member almost from the start of the Massachusetts and the Merrimac Valley, the histories of these three societies are a part of my own. I have the honor to have been President of all three, and have been absent from but a few of the meetings of either. The language of Ruth to Naomi would express my love and loyalty to each. It would be difficult, nay, impossible, for the most expert judicial adjudicator to differentiate between them as to their actual work for the growth of their members, their stimulating influence on education, especially in inciting the young to commence properly with a college training and the older practitioner to repair the misfortunes of a false start by leaving business and taking the college course, or in any other respect in which progress was striven for.

There is, however, one distinction which from the nature of the territory covered belongs to the Connecticut Valley and the Merrimac Valley, in which the Massachusetts can have little or no part. These two societies—the one with chief membership from Western Massachusetts, Vermont and Connecticut, and the other from Eastern Massachusetts, New Hampshire, Maine, and Rhode Island—have so stimulated the activities in our sister States that each State has a State society, all of which are to-day active and vigorous and doing splendid work. In my opinion each can justly claim the devotion and loyal support of every dentist within their confines as his first duty. Every argument which I may

advance in this address applies equally to each of our five sisters. As among women maturity is counted blessed, so should the Merrimac Valley and Connecticut Valley rejoice that their travail has brought forth such vigorous progeny; and as in the family, when the two parents have waxed old after years of hard work, and the children have set up establishments of their own, is it disloyal or unfilial to ask whether the grand achievements of the past are not sufficient honor and renown, and whether it is not befitting for the parents to retire from active competition in the same lines and on the same ground where their children are endeavoring to carry on the good work in which they had grown gray?

I yield to no man in my appreciation of what these two societies have accomplished for New England. Were the conditions the same to-day as of yore, no question could arise as to their future usefulness. But the fact is, the conditions have changed. A wandering society in New England to-day in active competition with State organizations is an element of weakness and not of strength, is a drawback to every State society—is an impediment in the path of progress, is the lagging superfluous on the stage after its best work is done. A local society where the community is large enough to support one, is useful as a tributary to the State society. But with the new conditions and new duties which obtain now, a peripatetic inter-State society is an anomaly, is a survival of the unfittest, is a relic of a happily past age of adolescence, ignorance and missionary necessity.

The educational victory is practically won. The ignorant and unskilled dentist is fast becoming obsolete through the thinning of the ranks by the relentless hand, and with some exceptions, none but the learned and skilled can have a legal chance to take his place.

Language fails me to express my joy and pride at the contrast between the past and present. It will be but a few years till we shall have all the honor and recognition as a liberal profession which the optimist hopes for.

All honor to the noble men who at a loss of time and money have labored, in the societies and in the colleges, to so advance professional education that public sentiment has called for the enactment of laws to protect society from the depredations of the ignorant and unskilled. While the laws in the various States differ in minor points, they are all in unison on

the main point, which is that a man must give evidence of competency. The enactment of a law, however, is but the initial step. Its chief value lies in its thorough enforcement. To secure this either public sentiment must be peculiarly interested and vigilant or there must be some organization to attend to it. A State Society is the natural guardian of the law. It can act through a specially appointed committee with the minimum offense to those who are violators and at the expense of the whole body and free from the opprobrium of personality.

In the laws of nearly every State, while directions are made and officers appointed for the licensing of men and penalties prescribed for violators, there is no provision for prosecution or the appointment of agents to attend to the enforcement of the law. The obligation upon every citizen, whether dentist or layman, is the same. The Board of Registration in Massachusetts is an examining and licensing body and no more obligation rests upon it to secure the enforcement of the law than upon each dentist here present and every citizen of the commonwealth. While the members of the board have prosecuted violators and secured convictions with fines, they have done so as individuals and not as officials and also at their own expense in time and money. There has been a great disinclination on the part of the profession to openly inaugurate or even assist in the arrest and prosecution of offenders. And even when knowing to violations and writing letters to the board, the great majority of informers and complainers have cowardly concealed their identity behind an unsigned letter.

Our law is a splendid one notwithstanding a few defects, and these defects can all be remedied by a few decisions from the courts. It has done so far a magnificent work. The members of the Board of Registration the past five years, have contributed for professional progress, in downright loss of money from time spent in their ill-requited labors, many times more than any other five dentists in the State. They have endeavored to do their full duty with patience, industry and an appreciation of the solemnity of their official oaths. They have succeeded in so administering the law, by a liberal construction of it at first, that no man could say that the new law deprived him of a right which was his before the law was passed, and afterward by a fair and impartial examination of all applicants, that the law has grown steadily in public estimation as a wise and just protection for the State. No one outside

the board could realize what a horde of incompetence would have spread over the State except for this barrier, and few, I think, fully appreciate what it is for a profession like ours to have its members augmented by one-fifth in five years, all of whom are educated and skilled. Gentlemen, you are unreasonable and over-exacting when you expect, or even ask, these generous and patriotic laborers to do your work.

Taken all in all, notwithstanding the little annoyances, the arduous labor and large pecuniary loss, I look back upon my five years' service in the board with great satisfaction. At the beginning the members were comparative strangers, entering without experience upon a trying and difficult work, but the single-mindedness, freedom from petty jealousy, constant courtesy, earnest devotion to duty and spirit of confidence and coöperation of each member made the board a happy, loving family of devoted friends. I cannot let this occasion pass, while considering the subject, without paying this tribute to my late associates. They will do their duty. We should do ours, and foremost among our duties is the strengthening of the State Society, so that it will be the embodiment of the general sentiment of the whole profession of the State, the right hand of our law, the advisor of the executive, the guardian of all our interests.

I shall devote but a few words to a consideration of the other causes which have restricted our membership and caused so many to conclude that a continued connection with the Society was not worth what it cost. Chief among these causes is the propinquity of the members. A very large majority of the members and active workers from the organization have been residents and competitors in one city. If you will look over the list of members in the programme before you, you will find of the 124 active and junior members sixty-four are Boston practitioners and fifteen live in adjoining places, leaving forty-five for the balance of the State. Neighbors quarrel naturally, while association with outsiders begets charity, courtesy and breadth. For the past thirty years some of us have been seen and heard too often. The same gladiators have contended for victory on the same sands, and the audience is tired and wants new actors and new plays. There has been less of this the past few years than formerly, though the opprobrium of the bear-garden days still clings to the Society's name. This will entirely cease when our membership is five or eight hundred.

The ambition and striving for office was a marked feature of the early years, caucuses even having been held, but I think it is true that this evil has been steadily declining.

I cannot find that any criticism should be made of the scientific attractions which have been offered from year to year. The Executive Committees have worked faithfully, and considering the lethargy of members, have generally prepared good programmes. The papers have been many and worthy, the discussions have been interesting and well sustained, the exhibits have been good—some exceptionally so—and the clinics pretty fair. On the whole the meetings will compare satisfactorily with those of other Societies. The stimulus of a larger attendance will undoubtedly be all that is needed to cause improvement in these respects.

Let us now consider if there are any remedies and hopes for the future.

I would recommend :

First. That the doors be opened wide to every legal practitioner who is "worthy and well qualified," wherever his education was obtained and whether supplemented by a degree or not, who carries on his practice in accordance with the requirements of professional courtesy otherwise called ethics. In other words, the only question should be character and respectability. Some of our most valued and respected members, even ex-Presidents, have never had a degree. If they had not joined the society before the amendment excluding nongraduates was adopted, we should not have had their esteemed coöperation. Some who were long members, but by our iron-clad rule about payment of dues lost their membership, cannot rejoin the society as many in a similar fix have done, some several times, because of the same disqualification. When the amendment was adopted provision was made for nongraduates by the establishment of junior membership. This was well enough for that time, but has proved less successful than was expected and should now be abrogated and our nine junior members be made active members.

There are two main reasons for this alteration which both came under the changed conditions of which I have spoken. One is, as I have said before, that the educational victory is won. The great object of the early years of society work was to encourage men to pursue the collegiate course. It may not have been so prominently mentioned as to merit this distinction, but the leaders and most

devoted workers have always been those interested in the colleges,—the well-educated and far-sighted men who hoped to live to see the day when the term dentist should mean as much in an educational distinction as the term physician does. Many men like Keep and Hitchcock among us and Harris, McQuillen, Buckingham, Taylor and scores of others, college professors and society workers, have passed on without the fruition of their hopes, but can any one who knew them doubt that the college and collegiate education held the first place among the motives which made them active in the Societies? Since in Massachusetts no one can commence practice unless he has pursued the regular course or an equivalent, this object in the Society has ceased to exist. The change then would affect only those who remain with us from the old dispensation. They are in a minority to-day in the State and the proportion is fast diminishing, and all can claim an experience of five years or more. A great many of the answers to my circulars which I have received have expressed the hope that this change would be made.

I cannot see that it would be a backward step nor one fraught with any dangers. The class which from any reason would be objectionable as associates is not likely to wish to join us, and a good part of those who would be eligible are as skillful, well-informed professionally, and as desirable as members as many of those who graduated from college years ago, and some of the recent graduates of some colleges.

The other changed condition results from the enactment of our law April 1, 1887. Before that day any one could commence practice with little or no previous training. In fact many did with practically no professional training and, if possible, less general education. While the law and the liberal construction of it by the Board gave these ignorant and incompetent men the same right to continue practice as the educated and competent, it is a fact that the former have been dropping out of sight as is shown by the return of letters which could not find them. Before the law the distinction between graduates and nongraduates was an easy one and had an object. But since the law has legalized all and as each man though humble has an influence in his community at least, he may be the dentist to the representative or senator from his section, he should have a chance, though not a graduate, if his

methods are respectable, to meet every other legitimate practitioner on equal terms as fellow members of the State society.

I would recommend :

2d. That we should exert an influence in so far as we can with courtesy and propriety relieve our field of the competition of societies which divide our territory and divert the talent which the society needs. It is perfectly legitimate and courteous for us to present arguments to those of our members who are also members of one or both of these societies.

My own position is fair and above board. I have in mind all the time in writing this address to send a copy of it, if printed, to each of my fellow members of the Connecticut Valley and New England Societies. In fact my first move in this line and the cause doubtless of my being invited to address you to-day was the resolution which I prepared and introduced to the New England Dental Society at its last annual meeting. It was passed and the committee provided for appointed. It has also been passed by the Connecticut Valley Society and the associate committee appointed.

The resolution was as follows:

WHEREAS, A question has arisen since all the New England States have dental societies and dental laws, whether it would be for the best interests of the profession that efforts should be made to strengthen the several State societies, therefore,

Resolved, That a committee of five, of which the incoming President and Secretary shall be members, be appointed by the New England Dental Society to take the matter into consideration, and to report at this meeting or at the next meeting.

Resolved, That this resolution be forwarded to the Connecticut Valley Dental Society, with the request that a similar committee be appointed by that society, and that the two committees be a joint committee to consider the matter.

The joint committee will meet in due time, consider the matter, and each committee will report to its respective society. I do not wish to forestall the work of this joint committee, nor should we, as a society, take any action in the premises. We are interested parties and can discuss the matter fully to get all the light possible, but any action looking to a solution of the matter should be by these societies and not by us.

This is not a matter of feeling or prejudice. It is a question for calm and deliberate consideration. It is particularly my experience the past five years in the State Board of Registration which

has convinced me that our greatest need to-day in Massachusetts is a strong and large State Society. I reason that the same is true in all States which have laws or wish to have laws. It would be easy, if desired, to have union meetings of several or all of the six New England State Societies, if New England needs any union of sentiment or action. Similar union meetings have been held. Under the present conditions of the profession, if a man has leisure or inclination for but one society, that society should be his State Society.

It seems to me :

3d. That if we are to have a society of six or eight hundred, as I certainly expect to see within a few years, it would be too large to be successful, unless subdivided somewhat after the style of the Massachusetts Medical Society. I will not take time to go into this topic at length, for it would be the proper work of a competent committee. I would simply say that by the subdivision we would secure what is now lacking and which is very much needed, a greater prominence of the social element. This criticism of the society has appeared in many of the replies which I have received. A stranger comes to our meeting for the first time ; no one knows him or seems to care to know him, and he does not come again. But in the smaller district societies, whose meetings should be held in the afternoon at least three times per year, and be preëminently social, he would soon become acquainted, have his heart warmed toward his fellows, while his stomach was also provided for.

Each district should elect counselors to the number of five so arranged that one should go out each year, and after the term of service should be five years each. The counselors of all the districts should meet annually, elect all the officers of the society, appoint all committees and attend to all matters of a business nature. This is the plan under which the Massachusetts Medical Society has worked so successfully.

Our annual meeting then, with the best of the papers which have been prepared for the district meetings and rewritten after discussion, would be wholly given to science and sociality, and be so attractive as to secure a large attendance.

In this case there should be one executive officer, called a Secretary, if you please, who need not be a dentist or even of the male sex, who should have a sufficient salary to devote a good deal of

time to the work, be able to attend most of the district meetings and know all that is being done in every district. The election of such an officer should be for a term of years or during good behavior. He should collect all dues and be in short the one business person or executive officer. The revenues of so large a society would be sufficient for this, as well as for the expense of a committee on the enforcement of the law, or this same executive officer could attend to that also.

THE STUDENTS' QUIZ SERIES; MATERIA MEDICA AND THERAPEUTICS. BY L. F. WARNER, M. D. THE SERIES EDITED BY B. B. GALLAUDET, M. D. LEA BROTHERS & CO., PHILADELPHIA: CLOTH, \$1.

This latest addition to the armamentarium of the Student is a compact, neatly printed volume of 220 pages of convenient size and good type. It is brought down to date, which is a creditable thing for the author—and of much value to the student and practitioner. The arrangement of subjects is good and the full index with the dosage tables, poisons and their antidotes, incompatibles and general classification are to be commended. Works of this character for reading courses, or for quick reference are invaluable to the student.

567 USEFUL HINTS FOR THE BUSY DENTIST. By Wm. H. Steele, D. D. S. Published by the Wilmington Dental Mfg. Co., Philadelphia; 1892. Cloth, \$2.50.

This is a miscellaneous collection of ideas from the journals and society transactions published within the last three years, after the style of Dr. Catching's Compendium. Some irrelevant things have crept in, such as cures for dandruff and warts, or "How to remove ring from finger," which would be more in place in a patent medicine almanac. The general contents, however, are useful and instructive. It is difficult to open to any page without finding something of practical utility, and, indeed, many points and processes are explained which perhaps have heretofore eluded the reader. A very good "index," or rather list of topics appears at the end, but the value of the book is seriously impaired by its unsystematic arrangement. For instance, the two methods of taking a bite correctly are separated by almost 100 pages. A grouping of topics and a careful classification of matter, with a

table of contents at the beginning and a *complete* index at the end, would improve the book materially. The proof reading is full of sins of omission and commission from beginning to end. The author's own contributions, wherever he has been obliged to supplement the work of the scissors, consist of sound and excellent methods.

There will be no one, we venture, who opens the book but he will be tempted to turn over page after page. The first four articles alone are worth the price of the book.

PRACTICAL NOTES.

EFFECT OF ELECTRICITY ON FILLED TEETH.

BY GEO. E. ZINN, D. D. S., CHICAGO ILL.

I have lately discovered, what seems to be a fact, and which, if not new to all Dentists, is certainly new to some. In my practice, I have often had patients who complained that a filled tooth was very sensitive and that whenever they touched it with a pin they experienced a sharp stinging pain. I have also had patients tell me to be careful; they always felt a sharp pain going through them when I touched a certain tooth.

On reading an article from the *Electrical Review* on "An Electrical Dentist," there came to my mind immediately such cases in practice, and also the fact of how we used to run or slide across the carpet, generated electricity, which collected in our bodies and which by placing our finger near a metallic object, would pass off with a spark.

The following explanation forced itself upon me: Some patients are of such a bodily temperament, as to act like Leyden jars or storage batteries, and hold the electricity themselves.

This electricity may be generated by the friction of hands on dry substance, such as cloth in case of a seamstress. It is not evenly distributed through the body, and whenever a metal instrument comes in contact with the tooth, there results an electric current for the equalizing of the electricity, this accounts for the pain experienced from one touching his own tooth. Another condition may exist which gives rise to the same phenomenon.

Some dentists are living storage batteries, they have their offices carpeted and the friction of their feet generates electricity.

they approach the patient to examine his teeth, touch a filled one with an instrument and the patient experiences a sharp pain. This is caused by the passing of electricity from his body through the instrument to the tooth and the body of the patient by means of the connection made with the tooth. It is a well-known fact that bodies have different capacities for electricity, that when two bodies unequally charged in proportion to their capacities come in contact, a current passes from the one to the other, equalizing the electricity of the two bodies, and it is so with regard to the patient and dentist. This explanation seems to me clear. I have heard it attributed to the "Electrical Condition" but not explained, consequently I have told my patients it was due to certain "Electrical Conditions," but never had a rational understanding of it. They, of course, would go home half believing it was so, or fully believing that it was the fault of the filling or of my work.

If this casts a true and new light on the point I gladly give it.

MEMORANDA.

Have you used tri-chloroacetic acid?

Dr. C. N. Peirce paid a flying visit to Chicago in September.

Dr. W. C. Barrett, of Buffalo, New York, visited Chicago early in October.

There were ninety-seven present at the October meeting of the Chicago Dental Society.

Dr. W. W. Walker has returned from Europe. Ditto, Dr. A. L. Northrop, of New York.

Dr. John H. Martindale, of Minneapolis, has gone to Germany to study the diseases of the nose and throat.

According to Dr. C. Prioux, pyoktanin and gentian violet stop all developing microorganisms in $\frac{1}{100}$ in water.

The British journals for September came with the Students' Supplement, taking in most cases the whole of the reading matter.

Pineapple juice has been recommended as a solvent for diphtheritic membranes. Why could it not be used as a solvent for the dead dental pulp?

FOR BURNS.

Euophen, olive oil, vaseline and lanolin for burns: 1 part, 3 parts, 16 parts, 8 parts. Mix, use externally.

DEATH FROM PENTAL.

Eight or ten drops only were used on a face inhaler, the tooth was removed and the patient died.—*British Med. Journal.*

CHRONIC RHINITIS.

Menthol, citric acid, lithium carbonate and powdered benzoin, 1 drachm each. Use five or six pinches daily as a snuff for each nostril.

The DENTAL REVIEW will publish the complete report of the American Dental Society of Europe, in the November number. By vote of the society we have the exclusive right to all papers and discussions of that society.

Dr. M. H. Fletcher, of Cincinnati, is Chairman of the Dental Section of the Pan-American Medical Congress, to be held in Washington, September 5-8, 1893. Dr. John S. Marshall is Secretary. There are fifteen honorary Presidents or Chairmen.

The Southern Dental Journal for September comes to hand with a complete report of the meeting of the Southern Dental Association, held at Lookout Mountain, July 25 to 28. This is a new evidence of enterprise which does much credit to the editors and publishers.

A mixture of potassium and sodium has been recommended for saponifying the contents of a root canal by Dr. Emil Schrier, of Vienna. Exposure to the air destroys the surface of the mixture, which also acts on a steel instrument, making it friable. Weiss & Schnorg, of Vienna, are sending out samples.

The Northern Illinois Dental Society will meet in two days' session, Wednesday and Thursday, Oct. 26th and 27th, 1892, at Rockford, Ills. A good programme and an interesting session is in store for those who attend.

JAMES W. CORMANY, Secretary.

The Dental College of the Province of Quebec will begin a course on Monday, October 17th. Among the list of provisional lecturers are W. G. Beers, L. J. B. Leblanc, S. J. Andres, S. Glohensky, R. H. Berwick, F. H. Stevenson and J. H. Bourdon. Dr. Beers, the genial editor of the *Dominion Dental Journal* is Dean of the new school.

Dr. L. P. Haskell, of the Haskell Post Graduate School of Prosthetic Dentistry, recently paid a visit to the early scenes of the days of his childhood and youth. While there the Doctor had the unalloyed pleasure of seeing two plates made by him, one of continuous gum and one of metal base, which had been worn continuously for nearly forty years.

The Executive Committee of the Dental Congress have voted to hold their next meeting in Chicago, instead of Cincinnati. The charms of dedication day were too many for them so they will once more be in our midst October 22d. It is expected that the whole committee will be present as the officers of the Congress are to be elected. Will lightning strike you?

SOUTHERN ILLINOIS DENTAL SOCIETY.

The seventh annual meeting of the Southern Illinois Dental Society will be held at Mt. Vernon, Tuesday, Wednesday, and Thursday, Oct. 18, 19, and 20, 1892. All dentists are cordially invited to attend. W. E. HOLLAND,

Secretary.

The Post-Graduate School of Anæsthesia, Chicago; capital stock, \$25,000; incorporators, S. J. Hayes, Hugh McIndoe and Louis J. Pierson.

Now, if somebody would only incorporate a Post-Graduate School for the

prevention of dark joints," one for the "introduction of gutta-percha fillings" and the "application of the rubber dam," there will remain nothing for dentists to do except to attend post-graduate schools.

MINNESOTA STATE DENTAL ASSOCIATION.

The following resolution was passed at the last annual meeting :

"*Resolved*, That the thanks of the association are hereby given to Dr. J. H. Martindale for the dignified, conscientious and efficient interest he has always taken in matters pertaining to the welfare of Dentistry and the Dental Profession. May success attend him in his new field of labor."

L. D. LEONARD,
Secretary.

AMERICAN ACADEMY OF DENTAL SCIENCE.

The Twenty-fifth Annual Meeting of the American Academy of Dental Science will be held in Boston, Wednesday, Nov. 16, 1892. Dr. A W. Harlan, of Chicago, will deliver the annual address.

As this will be the twenty-fifth anniversary of the Academy, a full attendance of the members (active, associate, and honorary) is particularly requested.

E. N. HARRIS, Corresponding Secretary,
248 Boylston Street, Boston, Mass.

In filling teeth with gold there comes a time when the filling is fixed—it cannot rock—then it is a matter of great moment to build to the WALLS instead of in the center. Too many dentists keep the filling high in the center, depending on ramming gold down on either side to fill the gap that exists. This is a mistake. The gold should always—when cohesive—be packed step by step a little higher at the junction of the cavity wall than to err in "balling" it up.

When you are filling a large proximal cavity in a bicuspid or molar, watch yourself and see how you do it. Then do it right and you will succeed.

DENTAL COLLEGES IN CHICAGO.

The American College of Dental Surgery commenced its session September 20; The Northwestern University Dental School opened September 27; The Northwestern College of Dental Surgery, September 29; The Chicago Tooth Saving Dental College, and The German-American Dental College, October 1st; United States Dental College October 3d, and the Chicago College of Dental Surgery on October 5th. The Haskell Post-Graduate School of Prosthetic Dentistry is open throughout the year, except during the month of September.

OFFICERS OF THE VIRGINIA STATE DENTAL ASSOCIATION, 1892-93.

President, E. P. Beadles, Danville; First Vice President, J. O. Hodgkin, Warrenton; Second Vice President, H. W. Campbell, Suffolk; Third Vice President, Geo. K. Heist, Winchester; Corresponding Secretary, J. Hall Moore, Richmond; Recording Secretary, Geo. F. Keesee, Richmond; Treasurer, Jas. F. Thompson, Fredericksburg; Executive Committee, Chairman, W. E. Norris, Charlottesville; J. A. Colvin, Charlottesville; W. H. Gingrich, Norfolk.

The Twenty-fourth Annual Session will be held at Charlottesville, August 8, 1893.

Editor of the DENTAL REVIEW:

The case quoted in the DENTAL REVIEW, in August, from Dr. Humphrey

(*Medical Brief*), as of menstruation at the age of seventy-five years, is probably not one of menstruation at all.

He seems to have based his conclusion on a single flow, then taking place. To make his opinion credible a number of repetitions at regular times, and possessing all the characteristics of menstruation, with exclusion of all abnormal conditions, such as cancer, polypi, etc., would have to be assured, and there would probably even then be a cloud of doubt somewhere in the horizon of probability.

GARRETT NEWKIRK.

FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF ILLINOIS.

The First District Dental Society of Illinois held its second annual meeting in Peoria September 13 and 14, 1892. The officers were all present. Dr. O. M. Daymude, of Roseville, was elected President; Dr. H. H. Silliman, of Chenoa, Vice President; Dr. W. O. Butler, of La Harpe, Secretary; Dr. E. C. Stone, of Galesburg, Treasurer.

Peoria was selected as the next place of meeting.

This year the work of the Executive Committee was placed in the hands of one man—Dr. W. A. Johnston, of Peoria, and the society pays him \$25 for his services—arranging and preparing an interesting programme for the next meeting.

W. O. BUTLER, Secretary.

CIRCULAR NO. 2.

CHICAGO, Sept. 26, 1892.

TO THE MEMBERS OF THE CHICAGO DENTAL SOCIETY:

Gentlemen:—It is estimated that Chicago and Cook County contain 700 practicing dentists. Of this number but 175 are members of dental societies. For the purpose of inducing a larger proportion to become members of the different organizations, the following preamble and resolutions were adopted at the June meeting of this society:

WHEREAS, In common with those of other professions, dentists are dependent upon association for whatsoever of progress and growth they may attain, and

WHEREAS, There is a large number, constantly increasing, in the city of Chicago and adjacent territory who should be, but are not connected with dental societies, and

WHEREAS, An *International Dental Congress* will be held here next year, in connection with the greatest exposition known in the history of mankind and

WHEREAS, This Congress will need all the material assistance and moral support that may be given by the profession in the United States, and especially by the dentists of Chicago and vicinity. Therefore, be it

Resolved, That the reasons always sufficient, are now multiplied and of unusual force for every progressive dentist to ally himself with at least one dental society.

Resolved, That the members of this and other societies, collectively and individually, should see to it that each and every reputable dentist in Chicago and all near cities and towns has an earnest invitation to attend our meetings and have his name presented for membership.

Resolved, That we invite the coöperation of other societies in this work, and suggest the formation of an associate committee composed of one member from each society who shall consider and report upon the best means to further the interests of the profession in our own city and State, and promote the success of the approaching International Congress.

Copies of the above were sent to the Secretaries of all the dental societies and clubs in Cook County, and it is earnestly hoped they will act promptly. Dr. Garrett Newkirk has consented to represent this society.

The object of dental societies is two-fold, viz.: Social intercourse one with the other, and the cultivation of scientific and practical knowledge. There is no doubt but that the individual, the profession and the public, each derive benefit from such organizations. It has been repeatedly stated by our most eminent and respected men that constant attendance on dental societies has been the strongest factor in their growth and success. It is conceded generally, that the community of interests and friendships, which grows out of frequent commingling of members of one vocation, are the most potent influence in raising the general standard of excellence. Is it not a rare occurrence for a member of a society to lapse into unprofessional conduct? Why, then, should not many more men, or all, share such advantages?

TOPICS FOR DISCUSSION BEFORE THE DENTAL CONGRESS—SUGGESTED BY THE
ESSAY COMMITTEE—GENERAL TOPICS.

Dental Anatomy and Histology.
Physiology and Etiology.
Dental Medicine and Pharmacology.
Chemistry and Metallurgy.
Dental and Oral Surgery.
Dental Therapeutics.
Operative Dentistry.
Mechanical Dentistry and Prosthesis, including Crown and Bridge Work.
Bacteriology.
Pathology.
Prophylaxis.
Orthodontia.
Ethics.
Dental Education, including Post-Graduate Work.
Instruments and Appliances.
Statistics.
Nomenclature and Terminology.
Dental Legislation: Its Local, National, and International Relations.
Dental Professional Organization for Protective and Educational Ends.
Miscellaneous.

SPECIAL TOPICS.

What is the best means of arresting decay in the deciduous teeth?

What is the best prophylactic treatment for the teeth of pregnant women?

The importance of considering and providing for the comfort of the patient during dental operations.

The selection of such instruments and appliances as will perform the necessary work with least pain and irritation to the nervous system.

The best means for conserving the health of dentists.

The present status of crown and bridge work. What is its future?

What are the best means of repairing fractured porcelain facings in crown and bridge work?

What are the best means of securing comfort and rest to the patient during dental operations?

Corrective dentistry: Its present status. What are the best regulating appliances and the best forms of retainers?

The importance of extracting some teeth from the crowded arches of young patients. What teeth shall be extracted, under what circumstances, and when shall they be removed?

Nitrate of silver as a means of arresting decay in the deciduous teeth.

The effects of hereditary diseases of the brain and nervous system upon the formation and arrangement of the teeth: To what extent are these abnormalities evidenced by the teeth of patients in hospitals for the treatment of such diseases and in asylums for imbeciles and hospitals for the insane?

Rheumatism and gout: the part they play in the abrasion and erosion of the teeth.

What are the effects of syphilis upon the teeth? Have we marks and tracings of this disease in the teeth of children born of syphilitic parents? Do such children live to complete the second denture?

Are white and yellow spots upon the enamel of the permanent teeth caused by alveolar abscess the result of death of the pulp in the deciduous teeth, or are they sequelæ of zymotic fevers?

Rapid and extensive absorption of the alveolar processes produced by the continued wearing of vulcanized rubber dentures. To what extent is this evidenced by comparisons between cases wearing vegetable and metal plates?

On the use of stimulants and anodynes to prepare patients for dental operations.

On the sterilization of dental instruments: The best means or appliances for this end.

On obtunding agents; Local anæsthetics and general anæsthetics.

On the best methods of constructing lower partial dentures.

Disease of the antrum of Highmore, and treatment.

The treatment of pulpless teeth: What is the best filling material for the roots and pulp cavities?

On the lighting of dental offices: What is the best color for the walls and ceilings of the dental operating room?

On electrical appliances for the dental office and laboratory.

The formation of pus.

What is the function of the leucocyte?

Microscopic research in the domain of dental caries.

On the etiology of dental caries from the standpoint of the chemist.

On the construction and destruction of soft and hard tissues: The differentiation between life and death.

What are the best antiseptic and germicidal remedies in the dental pharmacopœia? and how to use them.

DENTITION IN INFANTS.

A communication from the pen of H. C. Wood, upholding gum lancing, and taking issue with the views of Forchheimer on the subject, as detailed in his recent book on Diseases of the Mouth, has been copied very generally by the medical press of the country. This extensive republication may fairly be taken as expressive of a general approval of the position taken by Prof. Wood.

Upon the questions of difficult dentition and gum lancing, the medical world has been for some years divided; the smaller party taking the modern view that dentition is a normal process and rarely if ever produces dangerous symptoms; the larger party holding that dentition is responsible for most of the ills that infants suffer from, and that gum lancing is its sovereign remedy. This latter view is one of our most ancient possessions, having come down to us from Hippocrates. For centuries it remained unquestioned, and has consequently become firmly entrenched in both the professional and the lay mind.

John Hunter ascribed the following conditions to dentition: "Diarrhœa, costiveness, loss of appetite, eruptions on the skin, especially on the face and scalp, cough, shortness of breath, with a kind of convulsed respiration, and similar to that observed in whooping cough, spasms of particular parts, either by intervals or continued, and increased and sometimes decreased secretion of urine, a discharge of matter from the penis, with difficulty in micturition, resembling symptoms of gonorrhœa in its violent form. The lymphatic glands are apt to swell at this time; if the child has a strong tendency to scrofula, this irritation will promote the disease. There may be many other symptoms with which we are not at all acquainted, the patients not being able to express their feelings."

Most, if not all of these symptoms, are attributed to teething to-day.

Perhaps the earliest opposition to these views was by Rosen von Rosenstein, in the middle of the last century; but his opposition was only partial. But Wichmann, in 1800, expressed the true status of dentition when he said: "It is to be hoped that, in the future, dentition will be called up only when it would be impossible to comfort the relatives with the impotence to designate the true nature of the disease, or to quickly calm the laity."

Billard, who was a careful student of pathological anatomy, particularly with reference to infancy, found nothing to impress him with the importance of dentition.

As we look over the list of symptoms given by Hunter we find that many of them can be explained much more rationally by the results of modern positive observation. Diarrhœa has been shown to be intimately connected with fermentative processes; the respiratory symptoms are those commonly met in rickets and in cases of pharyngeal adenoids; the convulsions are probably due to rickets; and the enlarged glands are tuberculous.

During the past summer this subject has occupied somewhat the attention of the Academy of Medicine of Paris. At the meeting of July 12, Magitot said, "We wish that the so-called diseases of dentition, might be definitely erased from our medical nosology."

This brought a reply from M. Pamard, on August 9, who took the following ground:

1. All difficult dentition is accompanied by a disturbance of the health of the infant.

2. In cold climates, and in cold seasons, all difficult dentition is accompanied by reflex phenomena on the part of the respiratory organs. In warm climates and in warm seasons, all difficult dentition is accompanied by reflex phenomena on the part of the digestive organs.

3. The diseases allied to dentition in the infant, pursue a course, and present characteristics, which are clearly defined and well established.

These propositions were supported only by the old argument of coincidence, but the essayist was upheld by MM. Le Roy de Mericourt, Herard, Charpentier, Peter and Constantin Paul. He was opposed by MM. Ollivier and Hardy.

In the study of this question, it is necessary to separate dentition and gum lancing. The first is a possible pathological condition, while the second is a therapeutic procedure.

We think it can be said without fear of contradiction, that there is not a single positive observation which has ever been recorded to prove that dentition produces general or reflex symptoms. It is undeniable that at the period in life when dentition is in progress, the infant is subject to certain disorders which occur much more commonly than at any other period of life.

If it could be shown that dentition was the only peculiarity of the infant, then its causative influence would be clear. But dentition is not the only peculiarity of the infant, and coexisting phenomena can only be classed as coincident. The most profound characteristic of infancy is that it is the period of most rapid growth and development of all organs; and careful observation of infants reveals numerous and great deviations from the normal growth and development in many instances. It will probably not be denied that such deviations are found most commonly in infants who have been artificially fed. In infants improperly fed, and this term is too extensive to attempt to define here, reflex manifestations are very readily produced, and it is not improbable that even a normally developing tooth may, in such an infant, be the exciting cause of trouble. We have seen infants, who would invariably have a bronchial attack immediately before the prurption of a tooth, but they have invariably been infants who were suffering from demonstrable deviations from normal nutrition. We have further found that after improving the nutrition of these infants, the further progress of dentition was unaccompanied by symptoms.

In such cases while it would be just as well perhaps to recognize the possible influence of dentition, its subordinate importance should be kept clearly in view. The great danger of teething is in the diagnosis, for when this is once made, the important underlying conditions are apt to be neglected, and permitted to progress to the death of the child.

Dentition is a convenient scapegoat, and Ollivier has well said in the discussion just referred to: "During the nearly ten years that I have been connected with the Hospital for Sick Children, it has often happened that children brought to me for diseases of this type (teething) have been found to be suffering with an altogether different affection. It is very easy to invoke this diagnosis, but by passing in review the different organs and apparatuses, the diagnosis can easily be rectified."

But if dentition cannot be shown to be the great etiological factor of infantile disorders, it does not follow that gum lancing should be abandoned. It is difficult to overlook the numerous instances in which careful observers have

thought they have obtained good results from its use, but it would be well also to bear in mind the many cases in which it has failed. As a therapeutic procedure it may have some value, but the indications for its use must be sought elsewhere than in a supposititious condition of teething. We should like to offer the following conclusions:

1. Before the diagnosis of "teething" is made, there should first be carefully excluded, organic disease of all organs, infection, intoxication, and perversion of nutrition.

2. Gum lancing as a therapeutic measure should stand on its own merits, and be studied apart from any supposititious and undemonstrable process of teething.—*Journal Amer. Med. Ass'n.*

We understand that Prof. J. S. Cassidy, of the Ohio Dental College, will soon publish a book of some three hundred pages on Chemistry and Materia Medica. It will be such a book as may be used in dental colleges, and will be the prescribed text-book for his classes.

The Twenty-sixth Annual Meeting of the Ohio State Dental Society will be held in Columbus, December 6th, 7th, 8th and 9th, 1892. Ample accommodations and opportunity will be given for the exhibition of appliances, etc. Correspondence is solicited from those having anything good and useful to offer for the advancement of Dental Science.

A cordial invitation is extended to all,

OTTO ARNOLD, Secretary,
Columbus, Ohio.

OBITUARY.

S. A. GARBER, D. D. S.

Samuel A. Garber was born March 17, 1843, in Highland County, Ohio. In 1856 he removed with his parents to Iowa and settled at Marion. Two years later the family removed to Fairfield, Iowa. When the war broke out young Garber was scarcely old enough for war, but his patriotism was of that type that never shrinks, and he enlisted Aug. 9, 1862, to serve three years, becoming a member of the Nineteenth Iowa Infantry. He returned to Fairfield much broken in health, and completed his education. In 1867 he began the study of dentistry under Dr. J. Reynolds, of Orangeville, Ill., and began practice there. He was married to Anna C. Bloom Nov. 12, 1868. In 1873 he came to Tipton and soon secured a fine practice. In 1880 he went to the Western College of Dental Surgeons at St. Louis, Mo., for special instruction and graduated from that institution. His advancement in his profession after this was very rapid and his great ability was everywhere acknowledged in dental circles. He was honored with the presidency of the Iowa State Dental Society, and since 1886 has been Secretary of the State Board of Dental Examiners.

Early last spring he determined to move to a larger town for a two-fold reason. He desired a larger field for the finer grades of dental work, and a residence in a city where his children could enjoy the advantages of a college. With these

ends in view he determined to locate in Cedar Rapids. He was to have gone there April 1st, but the sudden death of Dr. Pasedach delayed him somewhat. When he finally reached his Cedar Rapids office, business came at once, and his best hopes were being realized when sickness entered the family. The death of his son Edgar was a terrible blow, and when Roy became ill he himself was prostrated. Roy's death added to his already full cup, and it is perhaps very near the truth to say that Dr. Garber died of a broken heart.

As a professional man, Dr. Garber had no superiors and few equals in Iowa. As a man he was generous, noble, and devoted to his family and his friends. There was a deep vein of earnestness in his character.

His death seems to us untimely; but who of us can say that the dreamless sleep in which he now rests is not after all a blessing to him, to whom life must have been bitter with grief had he lived. The serious illness of the wife and daughter prevented their attendance at his funeral, which was held last Saturday at 1:30 P. M., at the Lutheran church. The Masons of Cedar Rapids, and many of his Tipton brethren were present, and the exercises were under their direction. The G. A. R. Post of Cedar Rapids furnished a guard of honor. His brother, Dr. T. W. Garber, and his wife, his brother-in-law, D. Pollock and son, and a number of prominent members of the dental profession from various parts of the State, besides a number of Tipton friends were present at his funeral. In a beautiful spot in Oak Hill Cemetery he rests beside the bodies of his two sons whom he loved, and whose death he so mourned.

REPORT ON NECROLOGY.

The following testimonials and resolutions were presented, read and adopted at the recent meeting of the American Dental Association:

IN MEMORIAM—DR. JOHN ALLEN.

In the dispensation of an all-wise and overruling Providence, Dr. John Allen, of New York, on the eighth day of March, 1892, at the age of eighty-two, passed from this to a higher and better life; having attained a fullness and ripeness of age beyond that of the common lot of men.

Dr. Allen stood as a representative man in the profession of his choice.

In the line to which he gave special attention he was the chief, and was so recognized not only in this, but in the countries of the world wherever prosthetic dentistry is known and practiced. He, it was, who brought to its present high state of perfection that variety of substitutes known as continuous gum dentures.

Though his chief attention and labor were devoted to this special work he was interested, and took part in the various lines of thought and effort, that were employed for the development, growth and establishment of dental science and art. He was ever ready to defend, and sought to elevate the profession to a higher plane of usefulness.

Dr. Allen was one of the organizers of the Ohio College of Dental Surgery, a professor and an efficient teacher in that institution.

In the subject of dental education he always manifested a warm interest. A writer of more than ordinary ability, he has added many valuable contributions to the literature of the profession.

He was an active member of this association from almost the time of its organization, and did much to promote its welfare. He was also a member of, and an active worker in, a number of other dental societies.

Dr. Allen was a man of purest character and highest integrity; one not only respected but loved by all who knew him; in manner affable; in bearing dignified; in spirit gentle and sympathetic.

The loss of such a one is always an occasion of sadness and sorrow, but we have the consolation of the knowledge that his career was rounded, full and complete, and his death closed a life filled with good works for his fellowmen.

In view of the above,

Resolved, That we will ever cherish the memory of our departed brother, and seek to establish and perpetuate the high principles that were so fully illustrated in his noble life.

Resolved, That the traits so preëminently characterizing the life of him we now commemorate are worthy, not only of our high regard, but most earnest emulation.

Resolved, That this testimonial be placed on a memorial page of the transactions of this body and a copy, properly engrossed, be sent to the family of the deceased; also that a copy be sent to the dental journals of this and other countries for publication.

IN MEMORY OF C. A. KINGSBURY, M. D., D. D. S.

Within the last year Dr. Chas. A. Kingsbury was called from this to a higher life, in the seventy-second year of his age.

Dr. Kingsbury many years ago became identified with this association and retained his membership to the time of his death, and though he was not always present at its meetings, so highly was he esteemed by the membership of the body that it was a pleasure to all to have his name upon the roll of members.

Dr. Kingsbury entered the practice of the profession in 1839, in Philadelphia, and continued actively engaged in its pursuit during his life. He studied dentistry in Trenton, N. J. He was intimately acquainted with the leading men of the profession almost the whole of his professional career, and imbibed, in a large measure, the interest and enthusiasm of those men for dental science and art; indeed, that association, in a degree, shaped his professional life. He was familiar with all things that entered into the development and progress of dentistry for about fifty years. He was a man of liberal learning and broad culture; one whose sociability was a predominant characteristic. In his early life he was a teacher, and after many years' practice of his profession he was for a time a successful teacher in one of the dental colleges in the city of his home. He was highly esteemed by all who knew him; he was a man of sterling characteristics, genial, kind and sympathetic in his association with his fellows. In his death, not only this association, but the entire profession loses another of the pioneers who was ever devoted to its interests, ever contributing of his resources to its up-building.

Resolved, That we will ever cherish the memory of our departed brother as one whom we delight to honor, and to emulate in his leading characteristics.

Resolved, That this statement and resolution be placed upon the memorial page of the proceedings of this body. That a copy, in proper form, be transmitted by the secretary to the family of the deceased, and that it be sent to the journals for publication.

THE DENTAL REVIEW.

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ORIGINAL COMMUNICATIONS.

AMERICAN DENTAL SOCIETY OF EUROPE.

The Eighteenth Annual Meeting of the American Dental Society of Europe was held at Basel, August 1st, 2d, and 3d, 1892, in the halls of the "Vesalianum," generously placed at the Society's disposal by the University. It was called to order at eight o'clock A. M., Monday, August 1st, by the President, Dr. Lyman C. Bryan, of Basel. Thirteen new members were admitted to membership, an evidence of the interest which the younger American dentists practicing in Europe have in coöperating to maintain the reputation of the profession abroad. There were also in attendance over fifteen guests, American, English, German and Swiss; some of whom greatly contributed to the success of the meeting.

The President delivered the annual address.

ADDRESS OF PRESIDENT.

DR. L. C. BRYAN, BASEL, SWITZERLAND:

Gentlemen and Brethren:—The custom of delivering an address before this society is more honored in the breach than the keeping, and I had hoped, and many of you, if you have thought of it, have also hoped that I might let the matter be passed quietly over and get directly to the business of digesting the food for thought, presented to us by the rather large programme, some of which I regret to say is not forthcoming, and is only on the programme.

But the Secretary and other members who arrived early, have not looked at it in my light, and say I must revive what seems to me an obsolete custom as far as I can find by reference to the notes of former meetings. Our Constitution, which unlike the

laws of the Medes and Persians, meets with changes and revisions which are so numerous and frequent that former Secretaries have not been able to keep a record of its evolution—always keeps the one clause unchanged—"The President shall also deliver an address before the society."

As I have so far conscientiously endeavored to do my duties as laid down, at the eleventh hour I must essay this one also.

After nineteen years of wandering up and down the continent of Europe, sowing seeds of thought and good endeavors among all these political divisions, it comes again to its cradle on the Rhine, where with six members it commenced its career of usefulness. Of those six members we have five still on our rolls, and all six are distinguished and useful members of the honorable profession of dentistry, and bid fair to continue the good work for years to come. Around this nucleus of earnest workers you have gathered the best of your fellows in all parts of Europe until to-day with our forty odd active, and a goodly number of honorary members, we are a power in the land and hope to bring to our midst all those of our profession who have its elevation and usefulness at heart.

The founders of this society built well and laid out their plans on broad and generous principles as the growth and success of the society shows, and though some have gone, more have come, and we are a brotherhood who look forward with pleasure to the annual gatherings, and these informal meetings which bring old friends and collaborators together in thoughtful intercourse and relaxing recreation.

Senator Hale, of Maine, once said that he considered the Americans practicing dentistry in Europe, were the best representatives of America he had met abroad, and although we endeavor to adapt ourselves to the customs about us, it is the exception when we do not remain true Americans and proud of the great country which will soon lay before the world the results of its growth, industry and development at the great Chicago Exposition.

Here will also be the greatest gathering of dentists that the world has ever seen, and it is a question which must receive your consideration at this meeting whether we shall forego the pleasure of our annual meeting next year to meet with the great throng which gathers there next August, or whether we cannot have our session at such time and place as to keep up the interest in our

own work, and go in a body under special arrangements to the World's Columbian Dental Congress.

As Americans we will, at that meeting in Chicago, be proud to show the world our achievements in the last few years in every branch of our beloved profession; in its art and its science; in the universal elevation of the standard of graduation by which we place ourselves on an equal footing with the other learned professions of the day, and our colleges on a plane equal, if not superior, to those in any land.

We can point with pride to the fact that we have throttled those shameful and mercenary institutions which sold diplomas to the highest and lowest bidders and dragged the name of American dentistry in the mire; that we have succeeded by general coöperation in thwarting the designs of speculators who sought to corner the market of dental inventions and trade on this wonderfully futile field, levying a tax on dentists, more odious than those of the rubber patents or the Stamp Act of our forefathers. We now leave open and free the legitimate channels by which inventive geniuses among dentists can secure the rewards for their inventions which they so justly deserve.

I need not refer to the position which American dentistry occupies in Europe, it is enough that the young dentist of Europe does not consider his education complete until he has sought our shores and sat at the feet of our great teachers; that he is the most proud of his American degree and that his countrymen appreciate and reward him for his enterprise and success in securing it.

To the young dentists who have joined us to-day and in whose hands we have placed our Constitution and Code of Ethics let me ask them to ponder well the thoughts there presented and to which they have subscribed. To set their mark high and live up to it.

They need no better example than the achievements of the older members of this society.

Few if any have allowed the exigencies of their extensive practices to relax their efforts to maintain a high standard of work, and though conservative and true to their early teachings, they have not been slow to adopt that which the more venturesome of the rising generation have proved to be of value.

The perfection attained at the present day in crown work has made the long and tedious operations which were necessary a decade ago—almost a thing of the past, and where the courage of the

operator and the endurance of the patient permit of these all day sittings—the new forms of crystal gold which will be demonstrated to you at this meeting and which have come into such great favor of late promise to become a great boon to humanity, under which heading—owing to the fact that there are no patients present—I may also include the dentist.

At the last meeting a new departure was made in the selection of the place of meeting, it being the first time that the society has met at the place in which the President resided. This is a desirable innovation in that it allows that official to actually arrange matters beforehand, and the meetings should never be held when we have not a competent member to make the necessary preliminary provisions for your comfort and entertainment.

After these general expressions of approval of your good qualities as a whole, I hope I may be allowed to apply a counterirritant in the form of a bit of criticism.

The Secretary and your committee have been seriously delayed in the arrangement of your programme by the late replies received from members who have been asked to reply to three simple questions.

Not one-fourth of the members replied, and when the programme should have been issued, there were only three promises of papers. This necessitated the writing of personal letters to each member of the society and the arrangement of clinics to occupy half the time, and the invitation to guests to assist us in making a presentable programme. This is a great contrast to the early meetings of the society, when legend says, "every member read a paper." In this matter our older members are sadly changed.

These latter I can freely criticise for they are conspicuous by their absence.

It is with deep regret that we notice this absence of so many of the strong men of the society. Miller, Field, Elliott, Crane, Kingsley, Davenport, Jenkins, Spaulding, Sachs, and others, we have always considered indispensable to our meetings, and it is with a sad heart that I think of a banquet without a *Patton*.

To you all who as members, candidates or guests have made the pilgrimage to our old city of Basel to meet with us, as Chairman of the Executive Committee, I give you hearty *welcome* and *greeting*.

On conclusion of the address, the Society repaired to the hall set apart for clinics, and examined a very interesting exhibit of porcelain inlays prepared by Dr. William Dall, of Glasgow. The doctor, with whom skill and enthusiasm go hand in hand, showed his method of grinding the prepared rods, or, in case of necessity, a piece of a porcelain tooth—Ash's make preferred, being harder—setting in cement and then covering the cement with gold. The large number of specimens shown displayed fine workmanship, patience, and an earnest purpose to unite all the requirements of an ideal filling. The Society thankfully appreciated the service of Dr. Dall, who came some distance and as a guest, to make this exhibit.

Dr. Alfred Gysi, of Zürich, another guest, then showed some lantern projections of micro-photographs of tooth sections.

Gentlemen.—At the request of Dr. Bryan, I take the liberty to give you a lantern show of some microscopical preparations. I do not intend to give you an extensive or detailed lecture, but simply desire to show you some preparations of teeth which illustrate old and well-known facts in a more natural way than is possible by old-fashioned wood carvings as shown in books on dentistry. I only intend to show you a few of the preparations, so that it will not be difficult for you to remember them after they have been taken from the screen. I wish especially to call your attention to some preparations by Dr. Koch and applied by Dr. Weil. By this process, pictures are obtained which illustrate the nerve fibers more clearly and minutely than they have ever been shown in a text-book.

The members were unanimous in praise of the astonishing distinctness of these projections, which were made possible by extraordinary skill and patience in preparing the sections and the evident superiority of the process. The doctor's demonstration was warmly applauded.

MONDAY AFTERNOON SESSION.

The first paper was read by Dr. Chas. W. Jenkins, of Zürich, entitled, "A Vision of Dead Teeth."

DR. BRYAN, the President, then read a paper entitled, "The Surgical Treatment of Irregularities."

The discussion of this paper was deferred until the next day, after the clinic in illustration of it. The operation performed was the bringing forward of the left central incisor which was stand-

ing within the arch. The patient was a boy thirteen years of age.

The alveolus was thicker and denser than is usual at that age; the cuspid was not yet erupted. Dr. Bryan first injected cocaine, mouth and instruments having been already disinfected—as concerns the former certainly a wise precaution—and proceeded to wedge away the alveolar bone on the labial side, pushing the instrument steadily, under guard, until the indications showed that there was no longer any unloosened tissue between the gum margin and the apex. He also broke up the retaining septa of bone between this tooth and its neighbors, the little patient meanwhile showing no sign of pain. Following the other specifications mentioned in the paper, the doctor brought out the tooth to place, to the gratified interest of the entire assembly. To judge by the heavenly expression of the patient—when the hat was passed around, and its unusually bright contents bestowed upon him—the operation was as successful from his point of view as it certainly was in the opinion of the spectators. He appeared next morning with slight superficial inflammation.

At this clinic, and at some of the others, the facility of witnessing the operation was greatly increased by the use of a semicircular frame, so constructed for both standing and sitting spectators, that a large number could be accommodated. It was kindly loaned to the society by the Swiss Dental Association.

DR. A. V. ELLIOTT, of Florence, read a paper entitled, "Patients and Patience."

The Society then adjourned for the day, the evening being spent at the Summer Casino, where good cheer, good music, and jolly comradeship prepared the members for a *punctual* appearance at the

TUESDAY MORNING SESSION.

This forenoon was given up exclusively to clinics. Dr. Adolph Wetzel, of Paris, filled a right superior bicuspid, mesial surface and crown, placing tin and gold at the cervical wall, filling a portion of the cavity with cylinders and finishing with cohesive gold. He uses a leather-faced hand mallet. The doctor conceives that there is no better protection against decay at the neck of the tooth than tin and gold, or Abbey's soft gold, properly condensed and finished. Those who followed his manipulations know what that means.

DR. LOUIS J. MITCHELL, of London, set a Bonwill crown. He prefers to grind directly to the root, enlarging the opening in the crown with a diamond drill and countersinking upon the grinding surface. The pivot having been set in phosphate cement, the doctor placed quick setting amalgam in the countersink and cement in the cervical opening and pressed the tooth into place, the amalgam under the finger pushing the superfluous cement into the joint. The tooth was held in position until the cement had sufficiently hardened, making a very close fit and admirable operation.

DR. DE TREY, of Basel, filled a left inferior second molar with a kind of sponge gold, of his own manufacture, which he has used successfully for years. It can be used in larger pieces than Watt's and similar makes, and the filling finishes well and is extremely hard. The doctor used broad faced pluggers, and after fixing the gold masses—we can use no other word—with hand pressure the hand mallet. His manipulations were followed with great interest.

DR. TERRY, of Milan, filled a right superior central incisor, having very thin labial wall, by putting Abbey's soft foil at the cervical margin, wedging it with Watt's No. 1 crystal foil, annealed, with which he also filled all the undercuts, and against the thin enamel, using a great deal of hand pressure until there was a tolerably thick mat of gold protecting the fragile parts. He then malleted the rest of the filling, using No. 40 and 60 cohesive, and finished in the usual way. He uses the automatic mallet. The gold was brought over the thin edge and point so as to clamp the frail wall securely. Other similar fillings in the same mouth that had stood the test of years testified to the success of this method of work.

DR. DE TREY afterward demonstrated on the cadaver the insertion of an artificial section of upper jaw, left side, in accordance with a method devised by Dr. Martin, of Lyons. The piece is made of vulcanite, by measurement, to cover a somewhat larger area than the surgeon intends to resect, to provide for any possible necessary extension of the operation. The appliance used by Dr. de Trey was constructed in three sections joined by pins and hinges for ease of introduction. Channels for the injection of antiseptic washes are made by the insertion of thin zinc tubes in the vulcanite, which are dissolved out with sulphuric acid. When the

piece has been trimmed and fitted to place, the flap is sutured over it, and when the wound has healed, a permanent piece made from an impression of the part is put in its place. Dr. de Trey has not yet attempted this operation on the living subject; the inventor, who calls it "Immediate Prosthesis," is reported to have performed it with success, and has published a work describing it.

After dinner at the Three Kings, the reading of papers was resumed at the

TUESDAY AFTERNOON SESSION.

The Secretary read a paper prepared by Prof. Schiess, of the Basel University, entitled "Hints on Vision." A vote of thanks was unanimously carried for his kind interest in the work of the profession.

Dr. H. L. Schaffner, of Florence, presented some original methods of bridge work, reading partly from notes, and illustrating his remarks on the blackboard. His suggestions, though eagerly attended to by those present, cannot be reported intelligently without illustrations to explain them.

Dr. J. L. Mitchell, of London, then read a paper on "The Cleansing of Teeth."

The session then closed and the assembly took a special train to Bottmingen Castle, where supper, "stumps" and a stag dance ended the second day.

WEDNESDAY'S SESSION.

A paper by Dr. W. Mitchell, of London, entitled "Some Hints on Practice," was then read.

After a short discussion of this paper, as time was lacking, the guests withdrew and the members proceeded to the unfinished business of the session, the only portion of which to be here recorded is the election of officers, which resulted as follows:

President, Dr. L. C. Bryan, of Basel.

Vice President, Dr. J. H. Spaulding, of Paris.

Treasurer, Dr. Chas. J. Monk, of Wiesbaden.

Secretary, Dr. Chas. W. Jenkins, of Zurich.

Executive Committee, President Bryan, Dr. Patterson, of Montreux, and Dr. Hurlburt, of Geneva.

Membership and Ethics Committee, Vice President Spaulding, Drs. Davenport and Wetzel, of Paris.

In consideration of the fact that a large number of the mem-

bers are intending to go to the Chicago Fair, it was voted to appoint the next meeting, to be held at Geneva, for the first Monday in August, 1894.

Of the banquet at the Vetliner Halle, and of the delightful drive to the Hermitage, the latter through the hospitable courtesy of the local dentists of Basel, all who shared brought away the most happy memories.

CHARLES W. JENKINS, *Secretary*.

A VISION OF DEAD TEETH.

CHARLES W. JENKINS D. D. S. ZÜRICH, SWITZERLAND.

It struck twelve. Midnight. I was passing a graveyard, and not fearing ghosts I went in. Those pale gentry are said to show themselves at this weird hour. But I waited in vain; in vain I watched; in vain I quoted Hamlet;—not a rattle of bones, not a rustle of dead leaves, not a gleam of shroud, not a whisper of night-wind to stir imagination—or conscience. The long rows of white marble slabs stood out in relief against the rotten grass, like artificial teeth on wax. There was nothing else to hear, see or smell.

After ten minutes of this unfruitful silence, in order to break the monotony, I laughed. There was scorn in that laugh—contempt for a graveyard that could not furnish one decent apparition for the entertainment of a tired dentist. No response coming, I turned to go, flinging my disdainful ejaculation right and left, as old Cadmus, the first dentist, flung broadcast the proceeds of his first operation. Like our illustrious predecessor, I too was astounded at the result. Dragon's teeth—carefully implanted, with antiseptic precautions, *may* produce armed men; I should not like to dispute so ancient and truculent an authority, but that a few impatient words, sown more in disappointment than in anger, should yield a crop of—excuse me if I forbear to characterize that mob. It seemed to me that a thousand buried generations had, each man of them, sent up a delegation of thirty-two dead teeth, armed with biting accusations of our profession. How they swarmed, covering the broad earth, filling the vast heaven, closing out all other sights! Happy should I have been had the mere sight of them been all— I should not have had to write this paper!

Gentlemen, they were real ghosts. They could not be put out of mind by being put out of sight. They had been summoned by

a jeer. but they could not be laughed away. It was their turn to laugh now, those thinnest of all shadows, those dreamiest of all phantoms, those most ridiculous of all the doll-children of superstition, the ghosts of dead teeth, grinned, chuckled, and reveled in hideous gymnastics, to find me in their power. As I found no relief in closing my eyes, so it did no good to stop my ears. You have listened at the telephone when conditions were unfavorable; have strained attention and exhausted patience to unravel some important message; but if you were never cornered in a graveyard at midnight by voices that would be heard, voices that made a receiver of every pore of your skin, that seemed to endow every separate object in the universe with powers of distinct reproach, you have never known aggravation. Better far hear too little than too much!

Of the multitude of accusations to which I was obliged to listen, I have written down a sufficient number to enable you to judge of the rest, and to understand what is the public opinion in the ghost country, as regards dentists. To bring the report within reasonable limits I have put into the mouths of a few what in reality, was said by many, said many times with every conceivable variety of emphasis, illustrations and profanity. I give the exact language, so far as I can remember it, except the oaths. As the whole multitude evidently mistook me for a chosen representative of the profession authorized to stir them up, they belabored me accordingly. I trust my vicarious sufferings may be counted in commutation whenever the brethren sit in judgment on my share of our misdeeds.

The foremost in impudence and calumny were the bicuspid.

"You tried to rotate me," said one, "you know I have flat sides. Outrageous!"

"You split me with a screw," cried another.

"You dug me out piece-meal with the bur engine," squealed a cuspid, "and all to make room for my worthless bicuspid neighbor. You shouldn't extract *us* at all—we are the foundation corner stones of the whole denture."

"The devil you are!" called out the right superior wisdom, "who knows more about corners than I?"

"Corners in rot," sneered the bicuspid, "'twould be a good thing if your whole family had been buried with Moses and nobody

known of your sepulchre unto this day. For pure cussed self-conceit and wilfulness, you and the cuspids are peers."

The uproar that followed this speech was the avalanche after the gust of wind. I was hoping that the fighters would eat each other up and leave the field to me, but the cuspids soon got the floor again—that is, the ground, the air, the sky, everything.

"Talk of extraction," said Number One—"the wretch poisoned me with arsenic, tore out my vitals, sawed me off close to the gum, chipped away what enamel was left, drove a gold collar tightly over my neck and a stake into my stomach."

"Oh, how sweet of him!" exclaimed my Lady Lateral, "a gold collar! I should like a new necklace myself."

"I should like a piece of that steak," growled Herr Central, "my belly has had nothing but stinking cotton in it for full ten years—thanks to dentistry."

"Wait till you hear the worst," replied the Cuspid. "This son of mischief then fastened a long row of crockery teeth to the post, four between my mate and myself, and three more behind, a regular chain-gang, and left me to carry the disreputable lot for the rest of my natural death-in-life."

"How insulting!" "What ingenious cruelty!" "Too much to have asked of four live teeth!" were the cries that now filled the air. The molars were particularly sympathetic, but the bicuspid's were inclined to be sarcastic. "Served you right! you are the foundation corner-stones of the whole denture," they shouted in chorus. I picked up my ears again at the prospect of a feud, which circumstances being unfortunately very noticeable, as was also the unguarded smile of triumph in my hitherto mild and melancholy eye, the assembly became immediately solid and silent.

"Let the Bicuspid's speak," majestically said the first molar, who seemed to act as moderator.

"Campared to us," said the new speaker, "the cuspids have little to complain of; dentistry was invented for our destruction."

"In-d-e-e-d!" sighed my Lady Lateral, "you have not such delicate constitutions as we. Ah me! will those rude rough men ever learn to treat us gently? Think of packing a whole book of hard gold into my lame side with a trip-hammer! My nerves have been entirely shattered by scientific dentistry."

"Madam, I must beg to disagree. We bicuspid's are the true Martyrs of Dental Science. Not an item in the whole range of

human ingenuity that has not been expressly devised for our undoing. We are marked for outrage from our birth. We are often sacrificed to those self-conceited cuspids. If allowed to remain, it is only to be subjected to insult and abuse. We are regulated to death, or ground off to improve the occlusion, filled flat and left to decay again, pared down as thin as a German professor, so thin that we are sure to break off, or cut into halves to get anchorage for a big swell-head; or filled with amalgam on a pretense that we 'won't bear gold—'

"Just fancy!" interrupted my lady, "he can't bear gold!"

The bicuspid went on with increasing dignity; "or plastered over with oxyphosphate, or worse still, treated to an endless variety of nasty drugs. I should like to know if there is a single vile substance in the whole pharmacopœia that I have not had stuffed into me."

"You can't hold as much antiseptic filth as we can," cried the molars.

"We have just as hard a time trying to get rid of it; I had a chronic abscess fifteen years, and that fellow there said it was in the order of nature," rejoined the bicuspid. "It was in the order of his ignorance," said a central.

"If these bunglers would only be content to give nature a chance instead of sitting up nights to circumvent her! Half the time all that we need is a rest. But they stir us up every day with some new compound, each more irritating than the last. I should really like to know how many medicaments have been tried and discarded the last ten years."

Odors of creasote, oil of cloves, iodoform, permanganate of potash, carvacrol, terchloride of phenol, thymol, salicylic acid, eucalyptus oil, aristol, and of other more or less familiar agents now filled the air making the graveyard seem more homelike, at least more human, than before. It was an ingenious way of increasing my torments while pretending to lessen them. After an impressive silence, to ensure the full effect of this demon—stration, the speaker proceeded.

"The cussedest of your deviltries, sir, is your way of covering up neglect and malpractice. You call it capping, because you thereby cap the climax of your sins. You exhaust ingenuity and skill in the vain attempt to conceal murder. You smother us so adroitly that we can't give the least sign, not even summon

mourners to the funeral. If by chance one of us, after dying by millimeters under your hands, does call out a little sympathy and and there is some natural excitement in the neighborhood, you make that an excuse for pulling us all to pieces again, administering more poisons, making new fillings(at one hundred francs apiece) and using big latin words to hide your ignorance. Just as the all-round doctors do. That's what you call science, but we call it the crime of crimes: ODONTOCIDE"—!!!

The whole immense throng screamed out this word in unison.

Up to this moment I had borne the assaults of these misguided spirits with a fair amount of equanimity, I had felt a natural pity for their sufferings, and had professionally discounted their exaggerations. But even a dentist can lose patience! So long as they confined themselves to charges of ordinary caliber and used words to be found in the dictionary, I could put up with it; but when they presumed to call killing a crime, and to invent a new term for it, my gorge rose. I felt that it was quite time to assert the dignity of the profession. At any rate I would show that I wasn't cowed. So when this culmination of insult was reached, I mounted the highest gravestone in my neighborhood and spoke thus.

"When a dentist claps the climax of his many skillful operations by successfully putting a head on a bicuspid who has lost his, he may take the fellow's life, if he choose, and can only be fairly criticised if he do it with unnecessary torture—or lie about it afterward. I am not prepared to say exactly what amount of agony he is justified in inflicting;—that depends on the case;—I should judge some of you had been let off too easy;—but if he candidly says, 'die, bicuspid! I'm glad to bury you alive!' no ghost of you may stand up to rebuke him. Only when he boasts that these gently murdered and cunningly buried pulps do live and deposit secondary dentine, does he deserve to—spend the midnight hour in a graveyard."

There were plain signs of approval at this speech, for the premolars carry their cantankerous reputation with them into the subtwilight. Seeing that I had struck the popular vein—the vein of personal abuse—I took courage and ended with a story that also had its point.

"A young but guileless D. D. S. was once surprised and delighted by receiving a professional call from a person who was reported, by letter of introduction, to have a 'very wide influence.'

He wished to have a tooth drawn. It proved to be the right superior wisdom tooth. The case was a difficult one of its kind, but the young dentist attacked it with skill and patience and soon succeeded in dislodging a decayed crown having three roots. These he believed to be all, but as the patient was confident of there being one more, he made another examination and discovering a remaining root, removed that also. 'There must be still another,' insisted the visitor, whereupon renewed search revealed a fifth.

This the practitioner declared to be the very last vestige of wisdom in the mouth; but could not refuse the civil though apparently useless request to look again. He was astonished and mortified, to find two more, and now began to ask himself what sort of an anomalous case he had encountered. Who is this person of wide influence? he queried. He seems to be a gentleman, in spite of his air of contempt for the knowledge of his professional adviser. Meanwhile he worked on, extracting one root after another till he encountered one that defied his utmost skill. After repeated attempts and failures, he acknowledged his inability and advised his heroic and mistrustful patient to be content. At this the hitherto courteous bearing of the eccentric personage changed to vulgar abuse. 'You're a fraud, sir! What, charge five francs for breaking off a rotten tooth like that! Do you call that scientific dentistry? I suppose you imagine that you have just performed a very extraordinary operation?' 'I was under that impression, certainly,' said the doctor, a trifle vexed—only a trifle. 'The best any of us can do must sometimes fall short of perfection; I have not charged you anything yet; if you do not think I have earned a fee, I shall be content with having served you to the best of my ability. But I admire your courage.'

This tactful stroke put the stranger into good humor. He put his hand in his pocket, saying as he did so, 'I am at the head of a department of a very large establishment—the largest that exists, I believe.' The young man's face brightened. But it's the lower department, you know, and the salary is very small—(the face grew dull again—) perhaps I might create a sentiment in your favor—use my influence—to repay you—I really feel delicate in making the suggestion.—'Don't mention payment,' said the D. D. S., overjoyed at last. 'I shall do my best for any patients you may be kind enough to send.' 'Allow me to leave my card,' said

the retiring superintendent of the lower department. The doctor took the card and read, 'His Satanic Majesty. Hades.'

Messrs. Inhabitants of the Lower Department, that D. D. S., no longer young and guileless, stands before you. As His Majesty has failed, I perceive, in using his very wide influence, to create a sentiment in my favor, I am here to collect the bill."

That graveyard was emptied of ghosts in a twinkling, and your accidental representative sought his well-earned couch.

DISCUSSION.

DR. DE TREY: It is to the detriment of our *clientele* that we are experimenting all the time. I have had about twenty-five years of experience, and the longer I practice the less medicaments I use. There is an old saying that there is nothing new under the sun, and coming back to our old antiseptic, I have been using charcoal with a great deal of success. It is one of the best antiseptics in any closed place. The idea was suggested to me by watching the rebuilding of an old house, the bottom of which was taken off. They put in charcoal to prevent decomposition.

In simple cases I use alcohol, cold or hot air to dry out, and afterward put in charcoal and creosote. Since using this method I have had less trouble than with any other antiseptic system. I have not been using charcoal much, but when I have had patients who have not had the time to have their teeth properly treated, in many cases I could only put in my application of charcoal and creosote; when these patients have returned to me with this preparation in their teeth, only covered with Hill's stopping, they have told me that they have never had any trouble. With creosote alone there will certainly be trouble, but not when combined with charcoal.

DR. BRYAN: How do you combine them?

DR. DE TREY: I just take very fine charcoal; it can be mixed, and is then a kind of paste.

DR. BRYAN: Do you use it in spite of the fact that it penetrates the dentine?

DR. DE TREY: It discolors the dentine but it does not go through.

DR. ROUSSY (guest): I should like to say a few words to corroborate what DR. DE TREY has just said. I learned dentistry in the year 1875, with Bing, and he came to exactly the same conclusion

using charcoal and creosote in just the same way. I, myself, never use anything else. Bing puts nothing but cotton in the root; he does not fill the root entirely, he says it does not matter, but I insist on closing the foramen and find that it is a very good thing. There is great danger even with hot air, to treat a tooth without first putting in something which will not disintegrate at the end of the root.

DR. A. V. ELLIOTT, of Florence: It is a well-known fact that charcoal absorbs putrescent gases, and when applied in that way the only question is if it absorbs the gas, but is itself not absorbed. What then? It is apt to get into the cracks of the enamel.

DR. J. E. WETZEL: The powder must be very fine. It is a great absorbent of gases. I think the best thing is to close up the apex of a tooth with something more solid, when once the crown is broken off. I have had two or three cases where a tooth has been filled with charcoal which gave trouble. When I cleaned out the pulp chamber it was quite filled up with charcoal, and in the root canal there was a little bit of charcoal or something, which took me days to get out. I think it is the best thing to fill a root directly with something more solid than charcoal.

DR. DE TREY: I do not mean charcoal as a filling, but as a temporary antiseptic treatment. I should take elastic wood, and char the little pieces shaped to fill the root; dissolve with some eucalyptus, Hill's stopping to make a paste. Do you know that eucalyptus dissolves Hill's stopping nicely? You dip it in and push it right up in its place. I think eucalyptus is more antiseptic than chloroform, and is therefore more useful. The solution does not dry so quickly, and slips better into the roots.

DR. L. J. MITCHELL: The same thing was done in America when tooth crowns were used with the old wood pivots; they were first charred then dipped in creosote before insertion.

DR. C. T. TERRY, of Milan: Energy and perseverance are the best antiseptics, but unless you have the proper instruments, it can not always be done. It is sure to give trouble if a piece of pulp is left; not one case in forty fails if a tooth is properly treated mechanically. We are likely to be in too great a hurry; if we would take our time before we get to the end of the root we should have less ghosts to haunt us.

DR. DE TREY: If I spoke of it as an antiseptic, it is not to say that I use it much. In ordinary cases I never use anything but

alcohol, and I believe that you can go through all operations in the roots directly; if you have not an alveolar abscess, every tooth can be treated without any trouble. If I speak of using this antiseptic it is only in very bad cases.

DR. L. J. MITCHELL: I think that one of the greatest factors in treating a tooth is to get thoroughly into the roots; you cannot feed a man in the back yard, through the key hole of the front door. If you can secure direct access, you can get better success than any other way. I use a solution of bichloride in ether in drying them out, it is better than alcohol.

DR. BRYAN: Iodoform is almost universally used here, and with good success. I have opened many teeth filled with it and have found no trouble in any of them. It has been mostly successful treatment, and I always fill the roots that way myself.

DR. MERRIAM (guest): I always use iodoform and creosote and push it down with an air pump. I have used it for the last 5 years, previously I used the charcoal, and several times found the tooth became discolored on the margin of the gum. Since using the iodoform and creosote, I have found no discoloration whatever. I make my paste very liquid and blow it down with an air pump as much as possible. I always fill these teeth at the same sitting.

DR. MONK of Wiesbaden: With regard to iodoform, I should like to say a few words. I use it in two ways, mixed with a medicament which is simply a means of deodorizing. I have used it in that way for the last four years, and have been satisfied with my success. The German doctors began to say that iodoform had no antiseptic value, and among them was Dr. Miller. I told him of my success and his opinion is that by taking oil of cinnamon alone without the iodoform, the same results would be obtained.

DR. MERRIAM: A small piece of zinc should be used when there is a smell. I think that creosote mixed with iodoform will answer the purpose, same as they use it in the Lyon's hospital, and they derive great benefit from its use.

DR. MONK: I always use Evans' root dryer; it is a very satisfactory instrument; in treating through a cavity it is always well to open up with a right angle.

DR. TERRY: Use the best disinfectants, according to Dr. Miller or any one else. Speaking of dead teeth I have seen teeth which have been sensitive to heat and cold afterward, although thoroughly disinfected.

DR. BRYAN: One member says it is luck!

DR. SCHAFFNER of Florence: We should distinguish between the temporary and the permanent antiseptic. We may get very good results for a certain length of time. It may be perfectly filled and exposed again to the original cause of decay. Iodoform may be beneficial in that its effects are lasting, while many other antiseptics decompose.

DR. DE TREV: I have found by experience that the eucalyptus stood longer in the cavities than any other antiseptic except iodoform. I have left cavities for years, as far as I remember four or five, just when eucalyptus was first introduced, and from the experiments with it among my own servants I found that you could smell the eucalyptus after four or five years. The same with my *clientele*. With creosote, of course, you find nothing of this smell. My opinion is that eucalyptus is the best and most lasting antiseptic which can be used. If you take it between your fingers it is sticky like glue, and after well drying the dentine, it penetrates into the tubes, and stays in that state probably a very long time. Other antiseptics disappear after a time by evaporation, but this does not.

DR. MONK: If a tooth is well cleaned out, iodoform cannot decompose.

DR. BRYAN: Has Dr. Jenkins any remedies for allaying his ghosts?

DR. C. W. JENKINS: I was not intending to incriminate all dentists, but only to signify in an indirect way that it seems to me that the work of medication is overdone. I am of the opinion of Dr. Terry that the first thing must be cleansing of the roots. The ideal which no one absolutely and always realizes is to get out of the tooth every possible vestige of septic matter before anything goes into it. It seems to me that any disinfectant, if carefully put in, will make an antiseptic condition. Let us make as solid work as we can, and I think then we have the condition that will be likely to result in a permanent cure. One disinfectant may do it a little faster, but if we can get the clean condition, I don't think it matters so much whether we use one or the other. Having, we suppose, made it aseptic, then let us fill it as quickly as possible without letting in foreign matter, and let us fill it with something that will let nothing else in there. I can never say, for my own part, that I have got out every particle.

DR. A. V. ELLIOTT: Has any one had any experience with copper

as a disinfectant? I have used it a good deal, and I think Dr. Schaffner has also used it.

DR. BRYAN: There are as many kinds of root fillings as there are dentists, and about twice as many remedies for treating the roots as there are root fillings.

DR. TERRY: I find that the filling of roots is the most difficult of operations, and requires more perseverance, more time and more conscientiousness than anything else. I never met with success until I knew how to put cotton on instruments. It is a thing which requires skill, provided you want to save your patient a swollen face. Young operators as a rule put on too much cotton, and force the instrument up to the end of the root, which of course causes disturbance. I found out how to make a broach and have any size you wish. I would like to see any one put a disinfectant further than I can put one with these instruments. They do not break, and the very fact of knowing that you can rely upon them, enables you to do your work thoroughly.

DR. WETZEL: How does Dr. Terry temper these broaches? If you have a very fine broach, the steel commences to burn.

DR. TERRY: I put the nerve broaches in a glass tube to anneal them.

DR. DE TREY: One very important point in regard to broaches is when we sometimes break a long broach in a cavity. A conscientious man has often felt a cold shiver down his back when this occurs. I have tried to allay the inflammation in such cases by a mixture of eucalyptus. I have a little bottle always by me (not only for these cases which fortunately do not happen every day) and I take a little of this mixture and let it go down, then drop that solution of eucalyptus, very liquid, so that it can go all round the steel which is apt to rust in the contact, and since I have done that I have never seen a case which has resulted badly. I do not see the use of staying two or three hours trying to bring out these pieces when one can do as I have described. Ash's are the best and toughest broaches I have ever found.

DR. BRYAN: My experience has been that one of the best root fillings is a molar drill! The only exception has been that it has been expensive for filling roots.

SURGICAL TREATMENT OF IRREGULARITIES.

BY L. C. BRYAN, D. D. S., BASEL, SWITZERLAND.

There is one class of irregularities which is exceedingly annoying and "time robbing," as the Germans say; and after a considerable waste of energy on my part, and a trial of endurance on the part of the patient, I have for four years tried surgical treatment on them of what might be called a heroic nature. Irregularly erupted incisors and cuspids erupting palatally—inside the arch—are the special class to which I refer; but the treatment described for them will apply in modifications to a variety of irregularities.

The notorious resistance of the long rooted partially erupted cuspids to almost all of the usual appliances for their regulation, and the persistent effort necessary to move them, with not infrequent cases in which this resistance requires a force which not only puts serious strain on other teeth used as fulcrums or abutments, but produces displacement of them of a serious and annoying nature, are my excuse for presenting the following treatment given a cuspid which has erupted irregularly inside the arch, say for a young lady of twenty.

The temporary cuspid has, perhaps, remained firmly in place and the young lady has never consented to its removal. The dentist not being assured that a successor will immediately present itself to fill the void, which would be a decided disfigurement if the eruption of the permanent cuspid were long delayed, the operation is deferred and in time the point of the permanent cuspid appears inside the arch. These cases usually develop very slowly. The partially erupted point is the most trying subject to grapple with, and the most difficult to deal with, when secured, of any dental member. I had three cases in one year, and speak from the fullness of the heart.

The treatment which I have finally adopted is to inject cocaine and either partially cut away the thick intervening alveolus with drills and long fissure burs, or, when the alveolus is thin, bodily wedge the outer alveolar wall away with a half round, wedge-shaped chisel, by inserting the point of the instrument between the tooth crown and the bone, and forcing it up along the root until enough space is secured for the tooth to be brought out into place outside the lower tooth. This latter I formerly accomplished by pressing the above wedge-shaped instrument or the inner beak of

a suitably formed forceps up along the palatal surface of the tooth until the crown was forced outward sufficiently to be firmly grasped. It was then brought gradually out into place, and secured with a small plate, or ligatures. My present method of operating on these cases is much simplified by the forceps and fulcrum which are herewith presented.

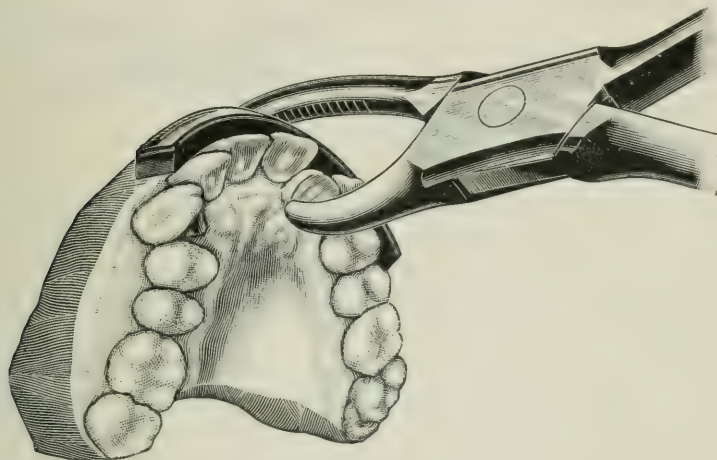


FIG. I.

This pair you will see has lobster claw formed jaws or more resembles the Tapir's jaws with round drooping proboscis and the short receding lower jaw.

This curved long round serrated jaw rests on a fulcrum fitted to the arch of the maxillary to be operated on, and the short beak pushes against the palatal aspect of the tooth to be brought out into line. I consider it absolutely necessary to lift the outer alveolar plate before attempting regulation on account of the great danger of accident to the pulp if the alveolar margin including the solid septa between the teeth are not broken up. The outer alveolar plate must be so broken up nearly as far as the apex, that the apex will not be moved in its position, otherwise the nerve will be cut off by any considerable lateral movement of the point of the root.

In bringing teeth into the arch by any system of regulating, or in moving them in any direction, in which heavy alveolus is to be encountered, great assistance is afforded to nature in her efforts to

absorb the alveolar bone through which the root must pass, if a part of the bone is drilled away, and the inflammation which accompanies absorption by almost all the usual methods of moving teeth, is greatly lessened.



FIG. II.

The greatest point of resistance in the alveolar wall is the heavy margin, or ridge, and the septum which clasps the neck of the tooth; and if this is broken up, either by wedging outward, or drilling it away, the deeper bone, which is very cellular and soft, offers little resistance to the tooth root being moved. The strength of this alveolar ridge of bone is so much greater than that of the internal body of the bone that when teeth are pushed with great force, applied against the point, this ridge acts as an unyielding fulcrum, while the point of the root moves an equal distance in an opposite direction to the point, generally cutting the pulp connections off on the bone through which it is moved. Shocks, such as blows on the incisors, often cut off the nerve and pulp connections in this way, while the heavy marginal ridge keeps the center, or neck, of the tooth apparently in its normal condition, the point having moved suddenly through the soft cellular bone, and destroyed the connection of the pulp at the apical foramen.

In moving teeth, by traction with ordinary forceps, great care must be exercised, and the forcep beaks must be lined with sheet lead, that the enamel be not injured, or the tooth slip. A strip of sheet lead the breadth of the tooth is bent over the crown from one side to the other, and burnished down approximately to the surface. When a tooth crown is sufficiently prominent to take an impression, a model of it can be placed in the beaks of a suitable forceps, leaving space around it, and inverting the points of the forceps, melted lead can be poured around the model of the tooth so as to fill out the jaws of the forceps. The resulting lead capsule, slipped over the tooth in the mouth, can be grasped with per-

fect security by the forceps, and they cannot slip or injure the tooth, although the tooth crown may be decayed and frail. The strip of sheet lead or tin, will generally answer the purpose, and is much simpler. In extracting teeth which are to be replanted, or implanted, the crown should always be protected with sheet lead or sheet tin.

By the injection of cocaine, or the application to the gum of calorific fluid, the pain of drilling, or breaking away the bone, can better be borne by highly sensitive or nervous patients than the continued pain of regulating pressure, and consequent systemic disturbance from inflammation and broken rest. When general anæsthesia can be resorted to, the work can be done more thoroughly and carefully. But a small thin model of the points of the antagonizing teeth should first be made to use as a bite for the articulation when the jaws are in a rigid state under the anæsthetic.

Injections of cocaine must be deep and high up to prevent pain in all cases, it being difficult for the cocaine to affect the nerve tissue in such deep-seated operations, for older patients though, the preparatory operation of opening the gum, and lifting alveolus margin, can be done painlessly with cocaine. Gas may be administered if the case is simple, and the operator cool and familiar with it; otherwise, a more lengthy and profound narcosis should be induced, the patient's head being held firmly by an assistant during the operation.

Calorific fluid applied to the gum locally on a pellet of cotton for two or three minutes has a powerful effect, and can be relied on in minor operations on gum and alveolar tissue. I often use it in extracting with good results.

The first impression of those who have not seen the easy and generally painless manner in which the operation may be performed is that it must be a very cruel operation, while those who have seen the operation and the patient will assure you that, with cocaine injected after taking an alcoholic stimulant or strong coffee a half hour before the injection, to prevent systemic disturbances from the cocaine—it is the most humanitarian method of operating for irregularities.

The after-effects are generally very satisfactory, no pain being experienced except soreness, and occasionally some swelling, lasting for some hours. The open socket at the palatal side offers perfect drainage should any inflammation supervene, but patients

complain of no inconvenience and are much pleased to get through with it so easily—each one of whom I have inquired have said that they would willingly undertake it again if necessary.

Young persons are particularly suitable subjects. I have operated in two cases for seven-year-old girls who for filling operations were particularly nervous and sensitive, who did not, with a cocaine injection, make the least sign of the slightest pain in bringing in each case a right superior central incisor—the roots of which were not fully developed—from the inside to the outside of the arch. Both of these cases never gave a moment's pain during or after the operation, and the teeth after one year and four months, and one year and nine months respectively are in *perfect condition*, only having been tied to the adjoining central with silk to steady them, for several days.

In two cases of ladies of twenty-five and thirty-five years respectively, some pain was felt after injections of cocaine when forcing the tooth out with forceps, but described it as a dull pain not severe, and more easily borne than excavating a sensitive tooth.

I have two failures—or partial failures—to report, one operated before the Swiss Dental Association, in Berne, for an eighteen-year-old dental student, in which case I operated under some excitement with the regulating forceps, bringing out a lateral incisor *without first lifting the alveolus*, which was heavy and thick. The pulp was ruptured and root filled later, and the tooth is after a year not so firm as its neighbors.

The second case of failure was of a girl twenty years of age, and was brought to me by a dentist. The dentist gave bromide of ethyl, but could not produce profound narcosis so that the patient wrenched the head violently and the tooth, a cuspid, was forced out of the socket by the elevator which I was using to start the tooth in its socket.

The models of this case are presented here and all will recognize that it was an extraordinarily difficult case at the best, and could have been better regulated by the usual methods, and should never have been undertaken. It was, however, the only case I could secure for this meeting, and as both cuspids were alike irregularly erupted palatally I wished to try one, and if successful, regulate the other before the society.

Under no conditions would I attempt the other now. Since 1888, I have had fifteen cases, all of which have been successful

except the two mentioned. None of these patients, who live in town—most are away now—would agree to appear before the society, but I have been able to show one of my first cases, the lady of twenty-five, to two of the guests present, and others of my colleagues have seen other successful cases.

DISCUSSION.

DR. BRYAN: You have seen the clinic this morning and heard the paper read yesterday. Are there any remarks to be made on the subject? I am sorry to say that Mr. Dall, of England, who saw the patients in my office operated on by this method, is absent. I expected to have his evidence that the pulps after two or three years were still alive in these teeth. The patients operated on were ladies of middle age. Perhaps he may come in later, but it will be in order now to discuss the last paper read yesterday.

DR. DE TREY: I would ask Dr. Bryan what he thinks of the state of the nerve at the apex of the root of a tooth in such a movable condition? Is the nerve broken, or is it only drawn out of place?

DR. BRYAN: My paper explains that fully to the effect that the apex of the tooth should not be moved in the least. All precautions should be taken to that effect. The lifting of the alveolus as you saw in the operation insures the apex remaining in its normal condition, and there can be no movement whatever at that point.

Those cases which I operated years ago now show perfectly healthy pulps answering to all the tests which we can apply to determine the condition of pulps, and they have convinced me that operations can be performed anywhere from the age that the central incisors erupt, to the age of forty or so. It is difficult at the age of forty to inject cocaine so that it will affect the tissue surrounding the teeth, sufficiently to make it a perfectly painless operation. The patients do not complain. As you all know, we do not attempt to regulate teeth by the usual methods, after the age of twenty or twenty-five. Persons in the usual occupations of life cannot afford the time nor the loss of rest, nor the nervous strain necessary to regulate those teeth, as they have to be brought through bone that is fully developed. Regulating after the age of twenty-five would be better performed under an anæsthetic, if profound anæsthesia can be perfectly accomplished, so that the patient does not move. As I told you yesterday, I had

operated for cases where, under an anæsthetic, the patient moved, and I had an accident. We had to remove the nerve by the apex, and replace the tooth in its socket; the next day we secured it with a small plate. That should not occur, and was a very unusual case; as it was the only one that offered itself for the meeting, I ran risks rather than fail to fulfill my promise to demonstrate. The greatest successes have been attained with very youthful patients.

DR. E. J. WETZEL: I do not think that it is so easy to injure a healthy pulp. Some years ago a lady came with a child and her nurse; I wondered why she was bringing a child of two years; she explained that the mother of the child was ill in bed, and the little boy had met with an accident loosening a tooth. In fact he nearly pushed out the tooth completely; the tooth was fairly dropping in my hand. They did not want the mother to know anything about it, as she was afraid the second tooth might not come. The nurse had the child on her lap, and I advised her to press the tooth up into the socket again. When I saw the boy five years later, it was grown exactly in place as it was before. The nerve must have been nearly drawn out of the pulp canal. It was a temporary cuspid tooth, and the child was then about seven years of age.

DR. BRYAN: Patients occasionally suggest to us after we have worked with screws—"Dr. don't you think you could take that tooth with a forceps and bring it out into place immediately?" Somebody was saying that a patient suggested the same thing to him. We often get these hints from patients, which, if followed out might be useful in our practice, although they seem, and are, as a usual thing, foolish remarks without any scientific basis. Occasionally we see a case where the whole jaw will be forcibly depressed and that will remain. Certain teeth if struck on the point will move at the apex sufficiently to destroy the nerve without moving the tooth at the cervical wall, or at the gum margins, or at the alveolar margins, and the very point which I wish to insist on is that of breaking up the alveolar margin, whereas the tooth is easily moved higher in the jaw. I think you can move a tooth, and especially is this the case, where the root of the tooth is not fully developed, as seen so plainly yesterday in Dr. Gysi's preparations. In an incisor tooth I think we can use a good deal of force, and do a good deal in those teeth with immediate treat-

ment without endangering the pulp. We must exercise great care in lifting the alveolus in making the way perfectly clear.

Dr. RATHBUN : Is the apparent, not real severity, any deterrent in the minds of well to do patients?

Dr. BRYAN : Well I never ask the patient ; they come and want a tooth regulated, and I say, "certainly, we will do that to-morrow," just as I would with filling a tooth.

Dr. RATHBUN : Yes but when a patient is brought by the mother, you must surely consult her. I grant it is a painless operation, yet in the eyes of an on-looker, it is a serious question whether an operation apparently so forcible can be endured by the patient. Would not a slow way be more agreeable to the feelings of the parent?

Dr. BRYAN : They submit to my judgment in the matter if I tell them that it can be performed at one operation, they take it for granted that it can best be done at the one sitting.

Dr. ——— : Can Dr. Bryan get these teeth into position in so short a time, without periostitis?

Dr. BRYAN : I should never attempt to draw back a tooth in an arch that never protruded. I should inject cocaine on the palatal surface of the teeth, and with a drill cut away part of the alveolar at the back and regulate by the usual methods. You open a canal for the exit of inflammation; you provide a canal in the alveolus in case you have forced septic matter in around the tooth. This patient may have by to-morrow morning a swollen face, but there will be no pain, because there will be no confined periosteum there. The pain comes from the fact that the bone tissue is unyielding.

A MEMBER : One can hardly avoid producing periostitis in regulating in so short a time. I don't see how it is possible to do it.

Dr. BRYAN : It is always an inflammatory process that removes bone to provide for the moving of a tooth through solid tissue; and what I claim is that you break up the tissue there and provide a drainage for the periosteum.

Dr. RATHBUN : I would like to ask if a mild amount of periostitis is not necessary to regulation, that is to say that until we can get enough we cannot get regulation.

Dr. BRYAN : The only regulations that are accomplished without periostitis more or less acute, are those which are accomplished by nature. The lip and tongue regulate teeth in the best possible

manner. You will always find that irregular teeth occupy the spaces just as perfectly as nature can arrange it, and that is the only regulation that I know of that is accomplished without pain.

DR. RATHBUN : Do you rotate teeth by this process ?

DR. BRYAN : Never without lifting the alveolus. If a tooth is moved further than the case operated on this morning, you can then rotate it if you hold it in such a position that you do not move the apex of the root. If any of you have had any experience in rotating teeth, I shall be glad to hear from you. I have found nothing in works on dental surgery relating to this subject. My experience with these older patients is that the teeth become perfectly solid and are comfortable, only that we cannot get as perfect anæsthesia as we can for a child. These two little girls that I operated for, sat without the least indication of pain, and although I was quite excited under the operation, and the mothers sat by trembling, the little patients kept perfectly smooth faces. Although it seems to be a cruel operation, it is the most humane way of treating these cases.

The operation is so entirely new that the details must be worked out after a time. It is evident that the thing is practicable, and time will prove that the details can be so modified as to make it accessible to every dentist who extracts teeth:

DR. GUYE, (guest): I was very much interested in the operation. Do you find the teeth elongate after the operation? I have noticed in rotating teeth where the apex has not been moved, that they did elongate.

DR. BRYAN : Yes, because if you take a cylindrical root in a cylindrical socket, it must of necessity elongate. I believe this has been practiced in England.

DR. GUYE : Have you noticed much receding of the gum after these operations?

DR. BRYAN : I have never noticed any receding of the gum. If the tooth is elongated, and if it is erupted well inside the arch, and is brought out and is longer, of course part of the root will be exposed.

DR. GUYE : You performed this operation under very unfavorable conditions. I think it would be wise to rinse the mouth with Miller's wash, which he claims disinfects the mouth perfectly. Does not Dr. Bryan think it should be disinfected?

DR. BRYAN : Yes, this is a very, very important matter, not

only for the success of the operation, but to avoid inflammation. I had the patient come to my office before coming here, and during the operation I had all the instruments dipped in carbolic acid, and I hope to have no inflammation. It is a most important point to have all the instruments dipped in some antiseptic before they are driven into the live tissue where septic matter would produce inflammation.

DR. SCHAFFNER: Do you think it would be possible or even easier to perform that operation by means of the old key? You would have a great force.

DR. BRYAN: You must have a fulcrum which allows space for bringing a tooth into its normal position.

I am very sorry the gentlemen are not here who have seen the cases in my private practice, because I have operated on two or three cases for one dentist here, and he is very enthusiastic on the subject.

DR. TERRY: Could not some screw be made to keep the tooth in its place and that it could not leave its bed at all?

DR. BRYAN: You saw by the operation this morning that every thing is in a very crude condition and that there is plenty of room for suggestions on the subject.

PATIENTS AND PATIENCE.

By A. V. ELLIOTT D. D. S., FLORENCE, ITALY.

The message, my brethren, which it is my purpose to deliver to you to-day, is entitled Patients and Patience—patients' patience—a happy if seemingly a somewhat paradoxical combination. As commonly understood a patient is the client of a medical man or a dentist. The word itself comes from the latin word *patiens*—the active participle of the word *patior*—to suffer—to endure suffering. And patience, one of the virtues most required by the dentist is of the same root, meaning waiting or long suffering. We have thus from the same origin but spelled differently, two very important requisites for a successful career on the part of a practitioner. He must have the one before he can have any use for the other.

According to the old theology, the world is composed of two kinds of people, saints and sinners. But in the experience of the impressionable dentist, the formula is changed to good and bad patients instead, which amounts virtually to the same thing, a good

patient being in his estimation a fit subject for the Kingdom of Heaven and the other fellow otherwise.

We all know by experience, sometimes by painful and wearisome experience, how great the difference is.

There is nothing like the dental chair as a reagent, so to speak, to test the qualities of an individual, and how often are we surprised at the result. To a student of human nature and of national traits, such experiences are interesting, if sometimes annoying.

One of the first things I noticed when I entered the profession was the small number of persons having the ideal superiority of the moral over their physical natures. After all, as the Irish poet might have justly said, there is much human nature in human nature, and it only needs some exciting cause (outside of the usual routine of life) to develop it and one of those exciting causes I have found to be the impelling force that drives a man to the dentist, where, according to the nature of the case, the nationality of the person, his previous experience, his education and his moral and physical balance he will behave himself in the chair.

To arrange and classify patients except in a general way is impossible. The varieties are as infinite as the characteristics of the human family are infinite. It is therefore not the ordinary every day kind of patient that I wish to present to your notice, but those which are more exceptional and which affect us in our efforts to minister to their comfort the most. Since most of the members of this society are men of great experience their opportunities of observation have also been great and their experiences I have no doubt will enable them to appreciate and confirm to a greater or less degree the truth of what I am about to give in regard to the unnecessary trials and annoyances we as dentists are too often subjected to.

To begin with let me call your attention to a class of patients, who, all will admit, are but too common. I refer to the late comer—the one who always comes late. Besides the divisions of the human family before referred to we might add those who are, barring accidents, always punctual, and those who are, barring accidents, never so. With a dentist in full practice, time is not only money, but the loss of it in this way makes oftentimes confusion and embarrassment. It so often happens that the next patient after the late comer is a superpunctual person—one who values your

time and his own too. What are you to do with these inconsiderate people.

The excuse given—they always have good excuses—does not give you the time lost without encroaching on that of the next, and does not enable you to do an hour's work in half that time. How often is our patience tried by such badly disciplined people who prove by their conduct how badly they have been brought up. Slovenly domestic discipline is a moral crime against society. The spoiled child usually develops into the selfish or inconsiderate man or woman and society suffers in consequence.

In dealing with such people who, by the way I am sorry to say, are usually of the fair sex, when the question of time is an important one, the dentist must be guided by circumstances and console himself for his patience by making his charge somewhat commensurate with the loss of time. But in regard to this class of delinquents who make appointments and neither keep them or notify to the contrary, the only way in such cases is to charge them for the lost time, which has the double advantage of remunerating oneself and teaching them a lesson on self-interest. Another class of persons which try our patience—somewhat related to the foregoing—is the self-willed and perverse. Such people do not like to have to submit to the necessary pain and inconvenience and project a spirit of antagonism toward the operator as if the work he might be doing was for his own pleasure and gratification. There are varieties of this class, including the nervous, and fussy self-willed, who make a great ado of their sufferings and hinder the dentist to the utmost. He is anxious to do his work well, but between what the nature of the case will admit and what the patient will submit to there is little margin left, and one reason why the conscientious dentist worries at such times is because he knows that if the work fails, this kind of a patient will not have the justice and charity to assume any responsibility for having contributed to it, but on the contrary, have a great deal to say about how much she suffered, etc. Patience is necessary here, and much of it; sometimes dentists, like medical men, get blame where they least deserve it and praise too sometimes where they least deserve it.

Belonging to the same family here referred to are those who to produce an impression and call attention to themselves have an exaggerated way of emphasizing. Not that such people suffer any more

than others, it is their way. They are selfish and self-asserting. Then there is the patient who has a little knowledge and a great deal of conceit—who, in fact, knows everything—who totally ignores your three terms at college and maybe twelve years of practice, and the fact that even a dentist must depend on the advice of a brother practitioner to a greater or less extent when his own mouth needs attention. Such a one is positive that such and such is the case.

He requires that you shall do the work as suggested by him. He takes up your valuable time arguing the matter, and then when you tell him you will do as he directs, let him boss the job, provided he takes the responsibility—he is unwilling to do that but resorts again to arguing through which, if by nothing else you learn how ignorant he really is. Those people are great nuisances; the only thing to do with them is to put on the cloture, the rubber dam, as soon as possible and give them leave to print as they do in Congress, any further remarks they may have to make and do the work as you think best.

Then there is the offensive aristocrat—not offensive necessarily because he is an aristocrat, but an objectionable variety of that social order. The real aristocrat is in my experience the most unassuming, unpretending, and the most friendly, sometimes even chummy of clients, but there are exceptions. Those who behave in a condescending way, whose manner would imply that they hardly knew the distinction between a professional man and a servant who, at least, although compelled by the force of circumstances, to consult the dentist and allow him to put his fingers in their unclean mouths, will resent it afterward by the cold cut, should chance bring them face to face outside the office.

Such vulgarity, I am happy to say, is rare, and when it does occur it hurts the possessor more than it does the recipient, as it proves the rule how utterly unworthy such people are to be considered superior.

Then there is the paradox, the impatient patient, the one we will say, who having a plate for the first time expects it to be as comfortable within the first few days as her grandmother's is after thirty years' experience. She comes day after day and insists upon your doing something. In vain you argue to prove that it is not the fault of the plate, but of her not being accustomed to it, and that to undertake to improve it would risk spoiling it alto-

gether. My brother's recipe for such people was to tire them out. Sooner or later she and her plate will have more affinity for each other, and she will cease her visits.

I once had a case soon after commencing practice when I was very inexperienced and had the idea—the exalted idea—that the patient must be made satisfied no matter what the sacrifice on the part of the dentist. I altered over her plate for her five times and worked nights. It was a perfect fit from the first, but the more I tried to please her the more she was determined not to be until her brother came and told me she was crazy and begged me to charge it all in the bill. Often enough however we have people who are not officially crazy, but are nevertheless nearly as bad to get along with as this old lady was.

Another class of persons who try our patience are the idiosyncrats—those having idiosyncrasies—some peculiarity or other about them which interferes with the proper performance of the operation in hand. Such for example as the inability to have the rubber dam applied or to open the mouth properly, or who gag or retch when paper or a napkin is put in the mouth, or an instrument touches the tongue; who are unable to swallow or to have the head in any other position than bolt upright, etc., etc., not including the common kind of idiosyncrats who positively object to that most humane of dental instruments, the engine. Nervousness has much to do with this phase of human nature—again patience and tact are here indicated and will do much for relief. Somewhat related to this group is the timid and apprehensive class. Those who confess themselves cowards and who approach the operating room with fear and trembling, whose dire necessity drives them to the dentist. If facetious they will call our apartment of relief—which our English friends call the surgery—the chamber of horrors. Fortunately for these people when they go to the educated dentist they seldom get what they expect. The idea such people usually have when they go to a dental establishment is one of blood and forceps, spittoons, and acute suffering. They are so grateful afterward to the gentle and soothing operator for the relief given and that they still live. Ignorance and nervousness in these cases combine to give so much unnecessary suffering.

Children too usually come under this head, but there are exceptions. Some of the bravest and most sensible patients I have ever had have been young children who cheerfully and willingly

assisted me in doing the necessary operations. Real little heroes and heroines submitting, without any fuss, to having teeth extracted when such was in order. The good conduct of such little folk under such trying circumstances, should put to shame the self-willed babies so many years their seniors.

But in dealing with the little ones ordinarily, much patience and tact is required on the part of the operator. He must gain their confidence and avoid as far as possible, consistent with good work, doing anything that might tend to discourage their going again to the dentist when required. I am personally opposed to the expediency of deception under all circumstances. A child so deceived, never forgets the shock, and retains perhaps for life a prejudice against our profession—to their injury and our less profit.

I will now refer to a class of patients who try our patience in a peculiar manner. I refer to those who make a fuss over our charges. In a cosmopolitan practice, such as most of us have here in Europe, it is inevitable that we have to deal with a great variety of people from different parts of the world, including representatives from the back streets of American villages and English provincial towns, as well as those of the highest nobility of Europe, not excepting, if you please, some of the crowned heads thereof.

We can't very well have two sets of prices for our work—one for the rich, the other for the less fortunate because we have no knowledge of, or interest in their circumstances; we have a right to charge a reasonable price for our labor and skill, even though that price may not correspond with the prices in vogue in the back streets of Squedonk. To avoid such unpleasant discussions, my plan is to always inform in advance. Should the person in hand by her appearance suggest the possibility of a discussion over the amount of the indebtedness when presented. Personally I dislike such discussions very much, and am willing to do all I can to avoid them.

And now, my friends, we come to that interesting individual, the deadhead, or, if you please complimentary patient—dentists as a rule being both benevolent and charitable—it is but natural that they should have for one reason or another unprofitable clients. Of course it is a personal matter with the dentist; he can do what he pleases with his own time and material—give it all away if he chooses, or he can charge his wife's mother as much as any one

else. The laborer is worthy of his hire, but often his disinterested kindness in giving time and skill without compensation is not adequately appreciated. The time, if he had it to spare, he could easily find more congenial use for it. One thing peculiar I have noticed about the D. H., she is often the worst offender in regard to punctuality. One hates to qualify a benevolent act by reminding such people of their obligation. There are, however, exceptions to this rule, who give one full value received in gratitude and nick-nacks. After all the cheerful giver has some consolation in its own reward.

I am afraid my fellow sufferers I am myself trying your long suffering patience too much in this review of some of the trials you must be all more or less familiar with. I might refer to many other kinds of inconsiderate persons who worry the dentist and make him tired. But I will be brief and only refer *en passant* to a few more such, as for example those who come to the dentist with unclean mouths, requiring him to clear away the offensive muck about and between the teeth before he can get at the suspected places, and I might refer to the inconsiderate person who stands at your operating door and insists upon seeing you "just for a moment," and I might here refer to the tactless person, who, having a prejudice against a brother dentist, is indelicate enough to abuse him in your presence. Such people, however, in my opinion, prejudice their own positions instead by doing so and should be discouraged. And again, I might refer to the person who comes the influence dodge with a view to her own advantage and who does not seem to realize what an old dodge it is.

What I have attempted to do, my friends, in this résumé is not to abuse human nature in general, but to present by classification those who worry us and make us suffer. Much has been written on dental ethics, the duties and obligation of the dentist, but I have never seen the other side presented, the duties and obligations of the patient. Perhaps that is too "large an order." All the same we need their coöperation to do good work for them. How fatiguing it is to work for some people. Blessed is the man who is so strong in vitality that he is not effected by the absorbing power of such people. Perhaps it is because I am more impressionable than many, or because I came into the profession later in life, but the fact is with me that it makes all the difference in the world at the end of a day's work the kind of people I have had. It is not a

question of the work itself to a man of mechanical and artistic tastes. There is nothing fatiguing about our work, and if we could choose our clients there is no occupation in my opinion to equal ours.

There is such a wide field for ingenuity and skill, and for ambition, and think of the good which is constantly being done for poor humanity by our profession, and there is the other side to the question to offset the disagreeable part of our daily life. Only for this other side, the dentist's life would certainly not be a happy one. As it is the balance between good and evil, or good and bad patients, is decidedly on the side of the good. Ours is a social occupation, and for the time being, at least, we are on intimate personal terms with those who confide their mouths to our care, and from among those, if so inclined, we can merge the relationship of dentist and client to that of friendship.

We too have an obligation and a duty to perform as I said before. The dentist should be a teacher as well as operator. He can do much good in that way, and he has such a good opportunity. He should keep his morals and principles as clean as his hands.

The ideal dentist should be a man of honor and dignity and worthy of every confidence, in fact, a gentleman in the highest sense of the word. He should always have in view the honor of his profession and its advancement, and his ambition should be to do all in his power by his own conduct, to raise it to a higher standard morally, intellectually and soundly and thus as far as he is able to make it worthy of recognition and the peer of the most learned professions.

He should remember that ours is not only a learned profession, but a useful one as well. It is our mission to save and restore and he should not forget that our work is mostly on living tissue and in the mouths of many, extremely sensitive living tissue. He should be a man of courage, firmness and gentleness and of course, conscientious. All kinds of claptrap cheap-jack methods or vulgar boasting which tend to lower and degrade us as a profession, even though the offender be ever so skillful, should have no place, in his plan of campaign. Boasting is a cheap vulgar and very unreliable way to advertise oneself except to advertise such an one as having very little of the true instincts of a professional man or a gentleman.

As regards ourselves we who are members of the American Dental Society of Europe, have every reason to be proud of the position professionally, scientifically and socially, which good and capable men have earned for it in the past. All honor to them and to those of the present and future, who will carry to further heights that banner the poet referred to on which is inscribed the appropriate word so appropriate here in Switzerland—*Excelsior*.

DISCUSSION.

DR. DE TREY: I think a great many dentists make a mistake in not being sufficiently firm with their patients. We have a saying that the patient should bend to the will of the operator and not the contrary, but the young, inexperienced practitioner has not sufficient confidence in himself and the consequence is that the patient takes advantage of the situation. A dentist should be firm, not rough. Facility in practice is secured by being firm from the beginning.

DR. A. WETZEL: My opinion is that dentists can never be too patient. I have sometimes had nervous people whom I would have preferred to send away, in fact have often been on the point of telling them to seek advice elsewhere, but after the lapse of several months have been glad that I restrained that inclination. If a patient goes to a dentist who is willing to humor them a little he gets a great deal of credit and they recommend him, they appreciate his work and frequently those persons whom they recommend are the best of patients, and one is able to do for them the very best work. A dentist must be patient himself, even though he may sometimes have impatient patients to deal with.

DR. MONK: That is, use tact.

DR. ROUSSY: I should like to draw the attention of the profession to the influence of the rubber dam on the patient, not only as a means of keeping their mouths shut, but you will find that as soon as the dam is applied, they are quiet. Unfortunately I did not use the dam for some eight or nine years, much to my subsequent regret, but for the last six years I use it in nearly every case, and find it a great relief to put it on as quickly as possible.

DR. BRYAN: In fact you consider it a general anæsthetic.

DR. SCHAFFNER: I find that dentists may sometimes be too positive, as in a case I had not long ago, the result of which was the loss of a patient. I had previously filled a tooth without my

exactly remembering that it was sensitive. The tooth was not sensitive before, and as we have often observed it became so subsequently. I filled the root and applied cold or hot air, when the patient complained greatly of the sensation, but I told her that there could be no sensitiveness as the tooth was perfectly dead; the patient resented this idea so strongly that she ultimately left me, and in considering the matter, it occurred to me that it might have been perfectly rational and coming from the next tooth which I had previously filled. No doubt such cases occur to others besides myself and provoke us unnecessarily and to our own loss.

DR. BRYAN: It is a good rule to take a patient's word in such cases, they are no doubt the best judges.

DR. JENKINS: I think we ought to remember that a nervous pain which is in one sense no pain, is a real one to the patient. Where the nerves are excited, the patient may attribute it to a wrong cause, but everything that we can possibly do to avoid giving suffering we should do; I have had my full share of such cases; people come to me sometimes because they think I treat them gently. We cannot see any reason for the pain, but where we see a reaction, we can find out and avoid little things which excite the nerves of our patient. Even sometimes when they are suffering from mere nervous excitement, if we can do something to calm their nerves by conforming to some condition which they think will relieve them, we should do so; we can then do what we like with them. I think the most troublesome patients are those who have little the matter with them but whose nerves are unstrung.

DR. A. V. ELLIOTT: Yes, when people are really delicate and nervous, we are willing to give in to them, but a lady came to me on Saturday last, complaining of toothache, and saying I must not hurt her. "She had been to a dentist in Paris, but he could not find anything, but she was sure there was something as the tooth ached her." I told her that unless she would let me do what I wanted, I could do nothing for her. She said I must not use the engine. It was a case of exposed nerve, and I suppose the other dentist had not been sufficiently firm with her.

DR. SCHAFFNER: I would like to ask the profession whether they do not consider it advisable to use morphia in a small dose with nervous patients? It produces good effects and the patient can stand the pain much better.

DR. DE TREY: I am not an advocate for all these things; they

have been used so largely and the facilities for procuring them are so easy that it has become quite a mania, especially in Paris, and I think we ought to avoid the use of morphia as much as possible, as it may be very bad for our patients. They find the effects so very agreeable that having once tried it they use it again and again, and, exaggerating their idea of suffering, use it too much. We professional men should be careful of such cases.

DR. GUYE (guest): I am of Dr. de Trey's opinion. I myself have used valerian with good results. I do not think it is liable to do any harm if used in reasonable doses, and having such a bad taste patients are not likely to use very much of it.

DR. DE TREY: I have taken this myself many times. It should be taken two or three hours before an operation, and has a very good effect.

DR. BRYAN: Some one has recently recommended whisky; that strikes one of Irish extraction very favorably. Is cocaine generally used by the profession at present?

DR. THEO. FRICK of Zürich: I have been using cocaine very much during the last three years, but I know that very much has been said and written against it. I have injected from 3 to 5 centigrammes and have never had any bad results as to the general effect on the patient. I do not keep my solution prepared beforehand, but get it ready just before I want to use it. It is not of much importance whether the solution is of 6, 8 or 10 per cent, but the quantity you inject, and I think 5 centigrammes should be quite sufficient, except in cases of pericementitis. I know that many greatly object to injections of cocaine, but I would recommend to colleagues at least to paint the gums with a camel's hair brush at the margin of the tooth, especially when the cavity goes up above the gum, and the ligatures have to be pushed up, it can be done very easily if the gums are first painted in this way.

DR. GUYE: There is one point about which Dr. Elliott spoke with which I quite agree, and that is the one of having patients informed that a charge will be made for time lost; in fact, I have this printed on my engagement cards, and I found that some people who were unwilling to keep their appointments were driven away by this notice.

DR. DE TREY: With regard to the question of cocaine, I think it is known to be ten times worse than the morphia in its effect upon the body. Cocaine attacks the nervous system a great deal

more than morphia. We should fight against these remedies and use something else in their stead.

DR. FRICK: In reply to Dr. de Trey's remarks, I believe he mixes up two things. Persons who have taken cocaine internally cannot leave that habit, and get taking more and more just as they used to do with morphia, but I have never heard, either in practice or in reading, that a subject who had had a cocaine injection felt the need of cocaine afterward.

DR. WETZEL: I always find it a good plan, in order to reduce the sensitiveness, either in preparing or extracting teeth, to engage the patient in conversation, and you can then excavate or take out a tooth with little pain; especially is this so with children.

DR. JENKINS: I think that any of our colleagues who have not used cocaine by injection should be cautioned against it. I always avoid giving it to a very nervous patient. It has a specific action which we ought to be very careful in producing, as some cannot bear it. It certainly has a very useful effect used externally. There are some with whom ether spray will answer very well, and some with whom a little encouragement will go a long way.

DR. ROUSSY: I should like to mention a case which occurred last year. A patient came to me to have a tooth treated. I told her that I should use cocaine at the time of inserting the tooth. I injected 1 centigramme at 3 o'clock in the afternoon. She went home not feeling very well and was obliged to call in a doctor, who told her that had she had 3 centigrammes it would have been her death. Perhaps you have heard of a doctor in Paris who says that in the use of cocaine much more water should be used. Since that time I have used cocaine without any trouble, but I put 5 centigrammes for 2 centigrammes and next day I make the operation with a new injection of course; but I think one cannot be too careful, as it is a most dangerous thing to use.

DR. L. J. MITCHELL of London: As far as I can see the best results have been by the combination of hydrochlorate of cocaine—3 parts, and 2 parts hydrate of chloral—a ten per cent solution for an injection, to which I add about a drop of oil of cinnamon.

HINTS ON VISION.

BY PROFESSOR SCHIESS, BASEL, SWITZERLAND.

What is health? This question is not readily answered, because health differs; what is health in a child may not be health in an

adult, and the health of an old man is not the health of an infant

This can be proven by the eyes. The eyes of a child, ten years old, possess powers which the eyes of an adult no longer possess. They have a power of refracting, which the adult eyes do not. The eyes of the one differ in form from those of the other.

“Seeing” seems, perhaps, a very simple and easy thing to do; but in reality, it is a very complicated function of this delicate organ. As long as our eyes do not trouble us, we are, perhaps, unwilling to believe it, but just as soon as we feel a difficulty in doing our usual work, we begin to think that this seemingly simple function may, after all, be a rather complicated one.

The muscular force of a man is greater; he can bear a greater weight; he can take a longer walk; but the power of accommodation is much greater in the eye of a child.

This brings us to the chief object of this brief paper.

For seeing, three things are absolutely necessary. First: there must exist a dioptric system for the creation of a neat image of objects looked at; secondly: there must be a sensitive plate for receiving this image; and thirdly: we must have an interpreter of the image. If any of these factors is wanting or deficient, then either the sight is not good, or one does not see at all.

The first factor lies in the eyeball and its contents, the *cornea*, *aqueous humor*, *crystalline lens*, and *corpus vitreum*; the second in the *retina*, and optic nerve, and the third in the brain.

Let us now consider the first factor. Here we must discern between two points. The one thing possible of the dioptric apparatus is the formation of distinct and neat images of things to be seen; the other is the possibility to do this for objects at different distances from the eye.

Everybody knows that the photographer must shorten or lengthen the focus of his lens, according to its distance from the object.

If his apparatus is adjusted for a distant mountain, and he wishes to take an object near him, he must lengthen the tube, or else the image will be quite confused.

Now we have no apparatus for prolonging our eye; but we do have something which the photographer hasn't in his apparatus.

We have the power to change the refracting lens; and we increase the refracting power of the system by a contraction of the ciliary muscle. We can see a near object distinctly.

We can express the power of the muscle by comparing it to the refracting power of a lens. The higher this refracting power is, the nearer can we approach the object to be seen. If we are obliged to see small objects, we must bring them as near as possible.

If small objects are held far away from the eye, their retinal image becomes too small to be seen distinctly. So we see, that in occupation with small objects we need a powerful accommodation.

Accommodation decreases materially with age. At the age of ten we have a power of accommodation equal to a convex glass of fifteen dioptrics; at twenty, it has already diminished to ten; and at forty-five, it is only four and a half dioptrics. That is to say, we can approach an object until it is only twenty-two and a half centimeters distant, and still distinctly see it. But if one cannot see it at this distance, and tries to bring it nearer, its image becomes continually more indistinct and confused. If this diminution is still greater, we are obliged to hold objects farther away in order to distinctly see them.

Here is a phenomenon we often see. Some persons hold a book or a journal far away, and behind the candle or flame. This state of the eyes we know by the name of *presbyopia*; and we can correct the defect by glasses.

The reason of the rapid decrease of accommodation is the hardening of the crystalline lens, and not feebleness of the muscle. Then every normal eye becomes, at a certain age, deficient for continual reading, writing, drawing, or any work requiring acute vision.

As dentistry demands acute vision, and continual straining of the accommodative apparatus, it will be necessary to wear glasses at an earlier period than in occupations which do not require so sharp a sight.

It must be especially noted that *presbyopia* is not a disease; on the contrary it shows itself only in good and sound eyes.

There is still another formation of the eyeball which demands, at a still earlier period, the use of glasses. It is *hypermetropia*. This is the state of the eyes whose anteroposterior axis is too short. Such an eye is not capable of forming a neat image, even of distant objects without an accommodative effort. It is easy to see that such an eye is prejudiced in comparison with a normal eye. The latter can see distant objects without straining its ciliary mus-

cle. Then, of course, if a hypermetropic eye wishes to see near objects, its straining will be stronger, and with the same force of accommodation, it will be deficient at an earlier period. Strongly hypermetropic eyes are obliged to wear glasses at a very early period.

There is still another deficiency in vision, which, at least in its minor degrees, occurs very often. This is astigmatism. It is a discordancy in the curvature of the cornea, which in the vertical and horizontal sense is different. The difference may be a small one; one dioptric, for example. It can also be larger, amounting to four, and more dioptrics. The chief consequence of astigmatism is the formation of a confused image. The acuity of vision will of course diminish. People with a marked degree of astigmatism must strain their eyes more than those who have normal eyes. Astigmatism can be compensated for by wearing glasses. It is not many years since we have become acquainted with this anomaly. The work of investigating this fault of refraction was done by Donders, though astigmatism was first observed by Young, an English philosopher. Let us look once more at the function of the eye demanded by an occupation of more subtle nature, such as dentistry. The eye here requires, above all, a good acuity of vision, and a good power of accommodation. Acuity of vision sufficient for any ordinary work is found in normal eyes, or so-called emmetropic eyes. But eyes diseased with myopia and hypermetropia of a moderate degree can, and do have a sufficient sharpness of vision. The higher degrees of both just named anomalies will sooner or later prove troublesome, and an impediment for fine work in dentistry.

Strongly myopic eyes, too often and continually strained, are liable to different and dangerous diseases, hæmorrhages, dissolution of the retina, degeneration in the macula and so on. Higher degrees of hypermetropia will also prove troublesome in doing steady minute work. It will be necessary to wear glasses at an age where people with normal eyes do not think of using them.

In the public mind the wearing of glasses is associated with the loss of sight, and this opinion might prove prejudicial to the dentist.

It is absolutely necessary to wear compensating glasses; and glasses should never be taken indifferently at an optician's shop, but should always be chosen by a competent physician. This is

still more necessary for choosing cylindrical glasses.

Scientific investigation has shown that, as a rule, there is a strict connection between convergence of the eye and a certain degree of accommodation. For example: If we converge for an object twenty centimeters distant, our ciliary muscle, in order that we may see the object, makes a contraction equal to five dioptries, *i. e.*, a glass whose focal distance is twenty centimeters.

As a rule the accommodative strain is the same in both eyes. Both ciliary muscles are equally innervated.

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In performing dental operations, it seems to me, while looking into the mouth from the side, generally from the right side of the patient, the left eye of the patient is nearer the object to be seen than the right.

The infallible consequence must be that the accommodative straining of one eye is stronger than that of the other.

Snellen, in Utrecht, has made observations on the possibility of different accommodation in the two eyes at the same time. This possibility is within narrow limits.

It will hardly attain dioptry. Even below this mark it will cause a disagreeable feeling, the strain becoming first troublesome, and if continued, eventually it becomes insupportable.

If such a position is necessary for a long time, it might be well to compensate for the difference by glasses. If there is astigmatism, the inconvenience might be still more disturbing. The trouble most often met with, in my opinion, is caused by a repugnance quite frequent in hypermetropes, to wear sufficiently strong glasses.

There is a public prejudice against strong glasses, which for hypermetropic eyes is quite foolish. There is reason for it in myopic eyes, where the constant wearing of correcting or super-correcting glasses cannot be too strongly condemned. Generally speaking, I think that people are too indifferent in choosing glasses.

Perhaps these few remarks, gentlemen, have shown you the importance of careful attention to your eyes; that they are not only useful, but more, that it is our duty not to neglect them with impunity. On the contrary, if proper care be taken, even eyes seemingly insufficient may do good and useful work.

DISCUSSION.

DR. SCHAFFNER: I think we dentists have a great responsibility as far as vision is concerned, for we may be the cause of great disturbance without knowing it. Sometimes an amalgam or a cement filling may so inflame the pulp that there is a reflex action on the ciliary nerve on the one side. One eye will then see further than the other and the sight be impaired. If we could inquire whether there is what is called balling of the eye we could in many cases connect it with a certain amount of "neuralgia" from inflamed pulp. That has happened to me. I was at one time under the care of an oculist, but he never told me the cause of my disturbed sight. I found out for myself by the slight disposition of the gum to bleed, connected with some sensitiveness of an upper molar. After the pulp was destroyed the trouble ceased.

DR. DE TREY: I think it very important to use a north light. When we operate we stand, as a rule, on the right side of the patient; this is a great mistake. I change from one side to the other and find that this gives me a good deal of relief. Dentists, as a rule, do not place their patients as they ought, and I think this has a good deal to do with preserving our sight.

DR. BRYAN: We ought to hear something from every one of those gentlemen who wear glasses.

DR. JENKINS: I should like to state my experience with and without glasses. The former has been very short and I should like to get what light I can from those who have worn them longer. I have worked my eyes very hard ever since I was a young man, both in my profession and with reading and writing in the evening. I have been very fortunate in retaining good sight. I have never had any difficulty with my eyes, except that they would get tired at night, but they were always rested in the morning. Five years ago I went to an optician and he told me to wear glasses of a certain kind when I looked at things at a distance, but not at my work. Four years ago I went to him again and he prescribed glasses and said that my eyes were not exactly alike. I sometimes forget to use these glasses. I do not feel any strain, but no doubt I see better with glasses more or less, but I would like to know from those who have worn glasses longer than I whether it is an advantage to wear them all the time or to wear them occasionally. I should like a little advice from some one who is not an oculist.

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DR. TERRY: This question has arisen with me several times. In filling teeth I have to get up very close to the work, and even young operators have to do the same. For instance, when one is working on the posterior surface of a front tooth, the head is thrown back and one has to get very near. I generally wear glasses when working and find it a great advantage. It is quite possible that many people do not realize that they do not see as well as they ought to.

DR. GUYE: Is Dr. Jenkins long or short-sighted? I myself am short-sighted and the glasses which I am wearing were given me by a skillful optician. I know that for long-sighted persons it is useful to wear glasses when doing fine work, but not necessary when looking at a distance. It is especially a great strain on the eyes in dental work, and I certainly think Dr. Jenkins should use his glasses while operating.

DR. JENKINS: I do use them now by my physician's advice. I am a little near-sighted, rather than long-sighted and never could see well out of doors at great distance.

DR. TERRY: I have not taken any circumstances into consideration. The question is, should not young men wear glasses generally in operating?

DR. WETZEL: When I was in England I saw double-ended excavators at the depot and thought it was a very good thing to get two for the same price as one. I was using one of these excavators in preparing a tooth when the patient suddenly jumped and I ran the instrument into my eye and had to care for it for a week, almost losing my eye. I need hardly say I have not used a double excavator since.

DR. DE TREY: The celebrated Professor Defour of Lausanne, says that those men who have a long sight at a certain age, just when they begin to feel that they get tired in their work and are obliged to look too far, it is better for them to wear glasses immediately, but very light glasses. When I was forty he told me that when I should be forty-five I should be obliged to wear glasses, and if even I could work without he would not advise it. I found by trying to do so that my eyes were going very badly. I wanted to look like a young man and did not like to wear glasses before the patients. It is a very important thing for a long-sighted man to begin wearing glasses at an early age.

DR. RATHEUN: I do not know much about the eyes, but I

think we London men have a far greater strain than any others; we work so often from five to six hours a day with artificial light, and I find that my eyes get tired like my back and my feet, but if I keep myself in good physical condition, and take plenty of exercise, cold baths, etc., my eyes rest up at night same as the rest of my body. My wife and friends say sometimes that my eyes look like two holes burnt in a blanket, after I have used them at close work during the day, they always, however, get rested over night. The fault I think with dentists lies in the fact that they do not take sufficient physical exercise.

DR. BRYAN : There are yet quite a number of members in the audience who wear glasses.

DR. GUYE : I think it would be a very good idea for young dentists to have their eyes examined every year.

DR. MONK : I was stupid enough to avoid having my eyes seen to for some time, and now I am obliged to use spectacles all the time, although I am not old. I think it is a false pride that makes a man ashamed of wearing glasses.

DR. A. V. ELLIOTT : My father was an oculist, and I may tell you that I had some little experience. I do not think it is necessary to wear glasses for everything, nor all the time, but I have found them of help to me very much. One should, however, not wear common glasses.

DR. BRYAN : There is a general opinion that the wearing of glasses is injurious to the eyes, just as many people say they never had any trouble till they went to a dentist.

DR. A. V. ELLIOTT : A great many people suffer from congestion, a kind of burning more or less in the eyes; they can be bathed in hot or cold water, which is a sort of healthy stimulant, but in these cases we must be governed a good deal by common sense and not use our eyes too much, and get glasses which we find are the most suitable for our sight.

DR. BRUNTON (guest) : I have observed that a watchmaker who is constantly at his work, uses an eyeglass and the eye which he uses with the glass is the best one, that is, the strongest eye.

DR. A. V. ELLIOTT : We use one eye more than the other, and yet we do not realize that one is better than the other, but such is the case.

PYROPHOSPHATE OF ZINC, *versus* COPPER AMALGAMS.

BY DR. E. DETREY, VEVEY, SWITZERLAND.

With the help of one of our prominent chemists in Basel, I have been experimenting several months to find a good plastic cement.

Some years ago I came to the conclusion that the pyrophosphate cements could become permanent and unalterable and could be employed in practice to save teeth better than any other material, provided they were prepared in the proper manner.

I had qualitative and quantitative analyses made of the Rostaing cement. Its composition is very simple. It is a combination of pyrophosphoric or mono-phosphoric acid and oxide of zinc. There are no traces of anything else.

I desire to refer to some of the chemical rules for obtaining the best result in the preparation of cements.

For fifteen years I have used Rostaing's cement and had good success with it; it has had years of trial.

What I have seen of my work during the last ten years is still in good condition, having undergone no alteration, when it was prepared exactly according to the laws of chemistry.

Many cements now in the market can be used more or less successfully, but they each have a different quantity of water of crystallization in their acid and have to be treated either by boiling more or less, or by adding water.

In any combination of two bodies, where a new compound is to be secured, strict laws govern, and if this is not done, the result does not possess the proper equivalents and is of an entirely different nature and very imperfect. It is thus with the pyrophosphates. The pyrophosphate of zinc is very hard and completely unalterable in the mouth; it cannot be attacked by organic acids, and the failure is due to bad manipulation.

I stated that between theory and practice, in the preparation of these cements, there was quite a difference. Theory alone is not applicable, and for this reason scientific men seem to be in error. For instance, if we mix the pure phosphoric acid with the pure oxide of zinc, the mass suddenly ignites.

The phosphoric acid is one of the most deliquescent bodies in chemistry, its affinity for water is great.

If we leave it for a short time in the open air, its nature is changed, and another compound is formed.

The oxide of zinc has a great affinity for carbonic acid gas, and is rapidly altered. This being a well known fact, it is easily understood that when a fresh bottle of cement is opened, the first mixture of cement will be perfect, but each time the operation is renewed the result is worse, and the last half of the contents of the bottle may be expected to yield unsatisfactory results.

The anhydric phosphoric acid, *i. e.* free from water, is a very light and white powder, when preserved in a hermetically sealed glass tube, and becomes rapidly liquid on coming in contact with the atmosphere, and forms several combinations while uniting with water.

It is among these numerous combinations that we must find the proper one, possessing the proper quantity of water, to insure success in the manipulation of the phosphates.

It may seem very simple to find this combination, but as a matter of fact it is difficult to do so.

The reason why chemists do not succeed is because they apply theories and fail to consider the practical side. To obtain good results, several dentists understanding chemistry thoroughly, should act in unison with a first-class chemist, who possesses the qualities of perseverance.

The cements now on the market are placed in the hands of dentists without sufficient instructions; even the best of cement is of no value in unskillful hands.

The more perfect a preparation of cement is the more difficult is its manipulation.

The most important point to retain the durability and permanence of cements, lies in the preservation of the material when received from the depot or preferably direct from the manufacturer.

The American Dental Society of Europe, has since its foundation in Basel twenty years ago considered it a duty to elevate the profession, which at that time was under the domination of charlatanism. Much progress has been made since then, but many dentists are still in a condition bordering on ignorance, stagnation and indecision.

I call on the young members here present, to judge if the old members have not faithfully served as pioneers in the advance-

ment of dentistry in Europe. The young men should follow us in elevating the standard by performing artistic operations.

Each member of our Society, individually, should consider himself as having been selected and received among us to be an honor by his example and his labors on behalf of this Society.

There is one cloud on the practice of dentistry, the use of amalgams. They are as yet a necessary evil, but I hope before long other material will drive them out of practice among the better class of dentists.

I desire to say a few words regarding the Sullivan amalgam.

I consider this filling as the last resort as a material to be used for filling teeth. It is durable when worked with knowledge, but the dentist who is proud of his work must put it aside entirely if he considers the æsthetics of the mouth and its sanitary state.

I have used it for about two years, and I felt so ashamed of my work that I have taken out the most of it. In some cases this filling material is dissolved rapidly by acid saliva, the teeth turn entirely black, and the mouth looks like a coal mine. Patients were complaining about the discoloration of their teeth. It is well known that the salts and oxides of copper and mercury are poisonous to the body. How could it be otherwise with the fine tissues of the teeth, particularly for delicate children. I am also certain that many disturbances of the general health are due to it.

DR. DE TREY then verbally added as follows: I am able to speak with certainty on this subject, having experimented with this cement for fifteen years, but this cement is a very difficult one to use, and needs a man to show you exactly how it should be done; if you do not follow the chemical rule your work will not be of any value whatever. When you receive the cement, take a little basin with some warm sand, then put little tubes like this [illustrating], you can get them in Geneva, dip the tubes in the sand, but it must not be heated too much, and it should never boil. A little too much heat will change the whole thing. I cannot better compare the salts of phosphorus, than to the salts of gold. They change from one moment to another, and there is no wall between the different sorts. A little bit of water in the phosphoric acid makes immediately another body.

When you have filled all your little tubes, let them crystallize, and then dip in wax or something to preserve from the air; of course you don't put it in the warm sun. Then you have always

ready tubes for each filling. In this way you will have even results all the time. If you work your cement right, you will be able to work it in about ten minutes any shape you like, but if you do not know how to use it, of course it crystallizes too quickly. You may get a little more polish with an agate burnisher, and see your filling look as good as any gold filling. In mixing the cement, it is better to use always a spatula of ivory; steel is the worst thing. When Professor Picard saw me mixing my cement on glass, he told me it was the worst thing I could do. The chemical action is always worked more quickly by heat.

Dr. Picard brought me one day a nice piece of brass, so we made the mixture, but of course it was attacked by the phosphoric acid. The cement became good and hard, but it broke. I had an idea lately to make a plate of brass covered with platina. Now we are going to put up an apparatus to mix up this cement. I promised Professor Picard, whose invention it is, not to tell anything about it. In mixing you must have a good strong heavy spatula so that you can work your cement with all your force. We must nearly neutralize the acid. The best way to obtain this result in your experiments with the new cement, is to mix it as thick as possible; then take it in your mouth, if you get an acid taste, your cement is not good.

I consider that when we succeed in obtaining a real cement, like the Rostaing, this kind of work must be paid well; if it is as good as gold why not charge for it. You take away all the trouble from the patient, you leave him in the chair perhaps twenty minutes or half an hour. A great many cements are too porous, but cement like the Rostaing is not. I afterward use an agate burnisher and obtain good results.

DR. BRYAN: You can't get their agate burnishers to go in between the teeth.

DR. DE TREY: It may be a help to dentists to let them know that I get cement from Worth, the best I think after Rostaing. Another important thing is to allow your liquid to get cool; when you have melted your crystal, go to work upon something else—but of course not too long, because it will darken, but you must have it cool—or you will not have time to place your cement and of course not time to polish it.

DISCUSSION.

DR. A. WETZEL: I should like to say that I used Sullivan's

amalgam for many years, and I shall go on using it, because I have seen the result too often. It depends very much on the condition of the saliva, and if it is acid, the copper amalgams dissolve very quickly, and also how the amalgam fillings are put in. I use amalgam in labial cavities near the gum, on wisdom teeth or even proximal cavities of wisdom teeth or the molars. I generally line the cavity with Sullivan's amalgam and then use another kind on the top of it. I put the amalgam in very hard, and I find much greater satisfaction. I have lately tried different experiments with different kinds of copper amalgams. I use S. S. White's copper amalgam, also Stewart's and Sullivan's copper amalgam. I took different copper amalgam and the contraction was much less, however. I fill the glass tubes with amalgam and find that they contracted. I put some other amalgam also in tubes and was able to note the difference.

I have tried Townsend's, Harrison's, Wise and Herbert's, Fletcher's & Welsh's. I find that they all contract unless you squeeze out all the mercury. I put in the amalgam pretty soft and afterward squeeze in some cotton wool which brings the mercury to the top, and then squeeze out the rest of the mercury beforehand through chamois leather.

Of course you all know that when the amalgam is put in very dry it is more difficult to make a filling, but I think it gives more satisfaction. I found the contraction was very little. You can take a look at those tubes which have been filled, and you will see that the surface does not remain smooth when it is put in wet. I should never like to be without copper amalgam. Of course there are certain teeth which it would be wrong to fill with gold. I suppose all these gentlemen have to do the same thing likely, and use amalgam and cements occasionally.

DR. BRYAN: After three years' use of copper amalgam, I will not speak on the subject, because I have become so prejudiced, but if any of the rest of you have anything to say, I should like to hear it.

DR. WETZEL: Amalgam fillings with phosphate cement mixed is called the metallic cement of Florence.

DR. RATHBUN: I use a good deal of copper amalgam, but only in certain places, and I have done so in the crowns or buccal cavities of soft back teeth, and when it becomes as black as a black hat it is doing its work. When we see, as we do, a copper

amalgam very white, it is soft and wearing away. You will see two stoppings in the same mouth, one white, one jet black ; one is doing its work and the other not at all. There is one thing that I would like to point out and that is that copper amalgam will fail under the gum margin, whether it is the amalgam or whether it is the tooth that wastes, I can not say. I have stopped long ago from putting copper amalgam under the gum and put something else instead. This will, as a rule, find favor.

DR. E. J. WETZEL of Mühlhouse : The amalgams bought at the depots vary a great deal, and I do not know if it is made by office boys or by experienced men, but I think the best thing is for the dentist to make it himself and take care that it is properly washed.

DR. A. WETZEL of Paris : I thought the contraction of the amalgam could be overcome by just putting in solid pieces of amalgam already set, but I made most of them by putting in silver wire in the inside of the filling, as perhaps into one of these tubes I would put in four or five silver wires.

THE CLEANSING OF TEETH.

BY L. J. MITCHELL, D. D. S., LONDON, ENGLAND.

Mr. President and Gentlemen :—In bringing before you this operation it is my desire to place it in its true position, notwithstanding that both the subject and more frequently the deposits about the teeth have antiquity on their side, and in no few cases is the latter otherwise than strongly marked.

This is considered an elementary operation judging from the position it occupies in the curriculum of didactic teaching at most if not all of our dental colleges, and right here its thoroughness cannot be too strongly impressed upon the students and the necessary manipulative ability acquired for its proper performance, for though it be considered an operation that any dentist can perform, how frequent it is that we find it but poorly attempted, and in most cases but very imperfectly done.

It is an elementary operation and should in all cases be the first one when patients place themselves under our care for treatment, the alleviation of pain only being excepted. I say this in direct opposition to what we hear and read about first filling an easy or simple cavity in order to gain a patient's confidence and assurance, or "get on their blind side," for in no better way can a dentist's

ability be judged, and an impression either favorable or otherwise created, than by the way we conduct this operation, for there is scarcely another that can be named that gives greater scope for our individuality than this one.

I shall in no wise touch upon treatment subsequent to the removal of the deposit, but consider the subject only from a manipulative and necessary standpoint.

All concur in its necessity, and two arguments are generally heard against it. One comes from the few members of our profession who are constitutionally "tired," and who say, "I have not the time to do it properly." This statement is usually veracity personified, for really they have not, for most if not all their time is fully occupied in wondering where their next patient is to come from.

The other comes from the busy practitioner who cannot afford the time, as patients (they say) will not pay a fee commensurate with the amount of time consumed, and here I take it that our professional brethren have neglected to impress upon their patients the old adage which we may consider in all the numerous operations we are called upon to perform as an axiom never to be forgotten, that "cleanliness is next to godliness," and as soon as patients are made to understand this, just so soon will they pay the fee for this as for any other of their oral requirements.

We hear also that educating patients is a lost art. Well, it may be, but a little instruction about the judicious use of a toothbrush is not all wasted, and the comfort and satisfaction a dentist derives from it more than compensates him for his outlay of words if we look at it purely from a selfish standpoint.

The rising generation probably require the most persuasion in this direction, but it is nearly a dead-heat between parent and child in this, for it is no uncommon circumstance to see a fond parent endeavoring to impress upon the son and heir the enormity of his offense in neglecting his toothbrush, where you can see at a glance that the parents' teeth have not even a passing acquaintance with the same.

With our present selection of instruments there is but a feeble excuse for not rendering the teeth perfectly free from both calcic and serumal deposit, and whether the operator prefers a pushing, pulling motion or a combination of both, which I deem preferable, none will inquire so that the end is thoroughly achieved.

Gentlemen, if we had a more general recourse to scalers, the fallacy of prescribing perfumery in the shape of a mouth wash, when a disinfectant is more frequently indicated, would not be so freely indulged in, but the admixture of a drachm of phenate of soda to the glass of water will render the operation of cleansing teeth much more agreeable for both patient and dentist.

My course of procedure is to commence with the scalers on the lingual and approximal surfaces of the last left inferior tooth, coming forward to the median line; this side having been treated as thoroughly as circumstances will permit, the same operation is repeated on the right side, after which the buccal approximal and labial portions are reached in the same way, care being taken to get entirely around their circumference.

After the lower teeth have been completed, or all done to them that is at the present time advisable, the attention is then directed to the palatine and approximal surfaces of the last left superior tooth and again progressing around the arch to the center; and exactly the same operation is duplicated on the right side, after which the buccal approximal and labial surfaces are accorded the same attention, always commencing on the last tooth no matter which side is elected to be first treated, for by so doing any hæmorrhage that may be produced is carried away and only conceals from view that part which is of the least importance to us, the same equally applies to the method adopted for the lower teeth; by thus contending with this source of hindrance and annoyance, in the most practicable way, we not only save our patient discomfort, but herein lies one of the greatest opportunities for the conservation of our own time and energy, and while realizing to its fullest extent the important part that the delicate sense of touch plays throughout this operation, still the aid of vision only serves to render it the more acute, and enables us to exercise it to the greatest advantage.

Very frequently it is desirable to return to the lower and upper arches again, especially where the operation can be properly performed at the one appointment, as this enables us to approach some of the surfaces under more favorable conditions than was possible at first, and in some cases several appointments are not only advisable but absolutely necessary for a thorough cleansing.

Another way in which our most important commodity, "time," can be saved is by having our instruments in proper condition and

then using them for what they were designed and constructed. When this is done there is greater hope for cleavage between calculus and dentos than where a scaler simply makes an excursion over the deposit, and only a third class one at that, the inevitable return journey not being at all conducive to a dentist's health or longevity.

Care should be exercised to keep the scaler as close to the tooth as possible. This applies to either a pushing or pulling motion and will reduce the necessity of cutting away the deposit to a minimum, and by following this course cutting has but rarely to be resorted to.

Thoroughness must be rigidly adhered to, and this does not mean that the remote and difficult places of access are to be overlooked, but that they are to be the recipient of the manipulative skill that their importance demands, which is generally in the same ratio as their inaccessibility; and in no place is this better illustrated than in the removal of the deep-seated deposit in pyorrhœa cases.

Cocaine can be used to advantage where there is a hypersensitive condition of the tissues attendant upon this disease, but it is seldom required in the other operations of cleansing where this affection does not exist.

After the deposits have been removed, the surfaces may now be polished with pumice stone powder, moistened with peroxide of hydrogen—that with an acid reaction answering best—applied with suitable forms of rubber points in the engine; this will remove any stain that may be left, and render the teeth in a condition that is least favorable for a new deposition.

I must thank you for so kindly listening to a reiteration of old principles, oft discussed, and were it not for this opportunity to present to this meeting a novel remedy of “incalculable benefit,” I should have hesitated upon intruding this subject upon you. It may seem a little late to introduce it here, but that is only to contrast the old with the new.

A lady who consulted me about an acute case of gingivitis arising from ridges of dense calcific deposit, well beneath the free margin of the gum, demurred when I suggested to instrumentally remove the cause of her trouble, and told me that only a short time before she had seen a dentist who carefully examined her case and prescribed a mouth wash of tincture of cinchona

bark, with instructions to use it freely the first thing upon arising in the morning, and told her she would soon be all right.

Being a little curious she inquired what would become of all the tartar, "Oh", the dentist remarked, "never mind about that, the gums will get healthy and strong and come up around those teeth and push all that off."

SOME HINTS ON PRACTICE.

BY W. MITCHELL, D. D. S., LONDON, ENGLAND.

Mr. President and Gentlemen:—Instead of preparing a paper upon some one subject which might afford or promote facilities for padding and mental speculation, I thought the present course more preferable, inasmuch as it would tend to promote discussion of a varied and practical nature, which to busy men would most successfully accomplish the desired result.

Crown work to-day constitutes quite an important place in our operative repertoire, notwithstanding the fact that I heard a prominent man speak of metal cap crowns as "a passing fancy," and on another occasion at an annual dental meeting I heard the same man ask for "a show of hands as to whether crown work should be considered a justifiable operation." I think the bare fact of such utterances being tolerated shows conclusively that the claim that dentistry is a liberal profession is not unfounded.

In the light of past practice I will endeavor if possible to correct what appears to me to be a few fallacies as regards certain lines of practice. Having had opportunities of keeping in touch with most of my own operations, as well as seeing those of others, I have made some deductions, the working out of which has, I am sure been a benefit to both my patients and myself.

The use of the Logan crown promoted the comparative observations I will mention. It was, and by many is still considered necessary where using a band as an adjunct to a porcelain crown, to have said band go well up on the root, many advocating that the alveolar process should be the only limit to the depth of band beneath the gum margin. Now I must, in the light of past experience emphatically differ with those who still hold these views; for in nearly every case where a band is used its advisability is advocated, for one or more of three reasons, viz.: either as a support for the root itself, which may be a very frail one, or as a *supposed*

support for the artificial crown, or as a *supposed* protection to the root itself. I have said *supposed* purposely, for in my own mind I am rather of the belief that the supposed support either to the root or crown exists chiefly in the mind of the operator ; and in the first case it not infrequently promotes just the very condition it is supposed to obviate, by severing the dental ligament, it thereby promotes both an elongation of the root and a recession of the gum, two very undesirable results which must very surely bring the band itself painfully into evidence, if it does not entirely reveal its upper margin, thereby promoting a nidus for the deposit of oral secretions, which will ultimately defeat the ends striven for.

You will gather from the preceding that I am but slightly in favor of the band system as applied to porcelain crowns. Such is the case, and when I do use a band I use a very shallow one, to obviate the disadvantages spoken of and to promote results not to be obtained by the use of deep bands. I feel justified in making the assertion that it is next to impossible to make a band one-eighth of an inch wide fit a root perfectly vertically except in the most extreme cases, or except by the Büttner or some analogous method, the barbarity of which is enough to condemn it, even if it did not possess other bad features which must be apparent to you all.

In most cases where a porcelain crown is desirable, a very careful preparation of the root is imperative. This can easily be accomplished by most of the various means at our disposal. I prefer to make the end of the root to which the crown is to be fitted quite concave, then, whether it is an all porcelain crown or one with metal attachment, it leaves the minimum amount of fitting to do, viz.: at the circumference of the root. This method of shaping the root is also an advantage in the final stage, permitting as it does the minimum amount of setting material when the greatest perfection of contact with the root is required.

Of all the porcelain crowns I have used, I much prefer the Bonwill, permitting as it does the greatest possible range for restoration of lost tissue, anatomical adaptability, and greatest resistance for masticating purposes. Right here I would strongly impress the necessity of a thorough preparation of the pulp canal, and the discarding of a too prevalent custom of using a stereotyped form of pin or screw. I have found the necessity of a varied assortment of anchorage pins, screws of different sizes, roughened pins, round, oval and flattened, all of which are to be *well* adapted to the re-

quirements of the root, and in this, as in the case of the crown, reliance in cement, that subterfuge of imperfect work, may almost be considered *nil*.

The majority of pins as prepared and sold, are too small, and are usually made of material that does not bear well the exactions imposed upon them. Dr. W. St. George Elliott, by a series of careful and exacting experiments, has demonstrated that German silver is the best material of which to make pins or screws for this class of work. The wire may be drawn down to the required sizes, and cut to different threads, not too fine, and somewhat sharp. Two of these pins may frequently be used in the case of bicuspsids, being soldered together where the crown is to cover them, making the part in the root to approximate the shape of the tines of a tuning fork, this prevents any possibility of rotation, and almost entirely prevents fracture of the pin where the strain is the greatest. I have brought for your inspection pins and screws of various kinds, such as I use in my practice.

I find the copper and diamond points valuable adjuncts in the preparation of porcelain crowns, for enlarging the openings for the pins, and for countersinking the crown for the retention of a white, quick-setting amalgam used in the final setting of the crown. I find after the pin has been set, and the crown adapted, an expeditious way of setting it is by the use of a combination of quick-setting cement and amalgam, as follows: Having first filled the countersink with amalgam, fill the under side with cement, and press crown firmly to place. This presses out all surplus cement from *beneath* the crown, thereby securing a perfect joint at the cervix, besides saving the time required for cutting out the cement, and refilling with amalgam, which would be necessary were not the amalgam used in conjunction with the cement. The operation is also rendered more cleanly than where the cement is allowed to exude through the crown.

Where a tooth is to be backed and soldered to a pin, after fitting the pin and adapting a platina or fine gold plate to the face of the root, these are to be soldered together in the required position, after which, any final adjustment of the plate to the root may be made.

After the pin and plate are in the correct position the tooth can be fitted backed, waxed, invested, soldered and finished. This method answers all requirements where single teeth are mounted,

affording at once an immunity from pain for the patient, better adaptability of the crown to the root and gum, to say nothing of the absence of bleeding which is almost inseparable from this class of operations, when deep bands are used.

As to the permanency of the operation I am fully in a position to speak, especially as to Logan crowns, having put on the very first ever used in England, nearly eight years ago. These have stood the test of time and use very well, and while not having used the other method, described in detail, quite so long, the possibilities of more perfect adaptation as compared with the Logan crown, augurs well for it's proving even a more satisfactory, and lasting operation. The fact that it is an operation requiring only from an hour to an hour and a half for its completion, is a feature that must recommend itself to the busy man.

I expect to be confronted with the inquiry: If deep bands are not good where porcelain crowns are used, why are they of service in the case of metal crowns?

In reply to any such query I would say, the circumstances under which the different operations are performed are as diverse as the operations themselves, for we frequently find roots that require metal crowns, in as bad conditions as it is possible for roots to get, consistent with any possibility of saving them at all; it frequently being necessary to restore them with amalgam, before any attempt at crowning can be made, and the objections to bands, in detail, do not hold here, besides, these crowns being nearly always for the restoration of masticating surface, the occlusion of antagonizing teeth prevents any tendency to elongation, which is not the case where we have an overlapping bite as with the anterior teeth. Other reasons might be given, but I will not detain you with them.

I will here mention a class of practice which to me seems inexcusable, viz.: in cases where decay has progressed through the bifurcations of molar teeth, we sometimes see this ignored, and crowns made to fit over the entire roots, as though no separation had taken place. This leaves the tooth in a very unsanitary condition, and which may eventuate in much trouble, and the collapse of the operation. My course of procedure in such cases is, where the separation of the roots is not *quite* complete, to separate with a fine fissure bur, and crown as individual roots. In the case of lower molars where the roots are perfectly solid, I make what is practically bicuspid crowns, should one root be somewhat loose, but otherwise in a reasonably good condition, solder both crowns

together at the grinding surface ; this promotes a steadiness which in most cases is all the shaky root requires to restore it to a state of comfort and usefulness. In the case of upper molars ; after fitting the bands to the roots, remove in any suitable impression material, pour in sand and plaster, then solder them along their entire length, except where they are to pass beneath the gum, also solder together at the grinding surface, a very strong and cleanly operation is the result. In no case would I consider it good practice where the roots are separated to make one band encompass the detached roots, as it is impossible to secure the requisite amount of steadiness necessary to a successful operation. This, with the natural mobility of the roots, will eventuate in their loss, their destruction being accelerated by the unavoidable accumulation of oral secretions, that are inseparable from this class of operations.

In passing I will allude to a method of restoring to use and comfort an otherwise very bad tooth. Three years ago, a case presented itself where a first right inferior molar was decayed through the distal wall, and down through the bifurcations. With a diamond disc I cut down through the crown, thus separating the roots, removed the ragged portion attached to the posterior root, prepared, treated and filled anterior portion as if it were a distal cavity in a bicuspid, mounted a gold crown on distal root. The patient to all appearances has four bicuspids on that side, but she is happy and what is more, has been quite comfortable and has had good use of that side ever since, and the work bids fair to last many years.

I will now mention a method of replacing a crown where the pin has broken off and cannot be removed. Over seven years ago I hit upon this, which I see has also been discovered by a German dentist, and spoken of in the April number of the *Dental Cosmos*, but must say the trephines as spoken of there have in my hands proved a dismal failure, having had a set made when I first used this method which is as follows: Grind pin and root off to a common level, then with a retaining point drill holes to the required depth around and parallel to the pin, connect these with a fine fissure bur, then fit a tube of suitable metal, German silver preferred, and proceed to completion as if the tube was the pin. This very materially simplifies an otherwise difficult operation.

Another method of restoring a porcelain facing where the pin and backing are intact and cannot be removed, is as follows: Cut two parallel vertical slots in the backing, to allow the pins of new tooth to slide into, leaving the pins so that they protrude as far

through the backing as possible, then fit and burnish to place a piece of skin platina *over* the original backing on the palatal or lingual side. This fitting must be done *very* neatly, carrying the new backing just under the gum margin. When this is done a drop of wax will fasten the pins to this casing, *remove very carefully*, and when investing, see that the casing is perfectly filled to exclude borax or solder, with which the pins can be nicely flushed, finish in the usual way, a small amount of quick-setting cement is all that is required in the final adjustment. If a shoulder can be left to receive the impact of the antagonizing teeth, so much the better. I have omitted many of the elementary details of these operations as they must be contended with upon their merits as you are all undoubtedly aware. Varnish and stearine have been advocated for the protection of cement filling while crystallizing. I have found a small amount of stick wax, composed I believe of beeswax and gum copal, if worked into the surface of the filling with a warm instrument, before removing the rubber dam, enhances the durability of the filling.

Many of you have no doubt experienced the same difficulty that I have in the treatment of alveolar abscess where there is a sinus, yet the root is impervious to the exit of medicaments. A method I have used for the past year with considerable success is as follows: cleanse the root as thoroughly as possible and fill as usual. The treatment of the sinus is by the insertion of a gutta-percha point, pink preferred, dipped in oil of eucalyptus, and of sufficient size and length to well distend the opening and reach to the seat of trouble, by leaving the point in situ, I have found a few days would suffice to effect a cure. As granulation proceeds the protruding end may be cut off by the patient, or a shorter one inserted. This method is certainly more cleanly than where cotton is used, and the ease with which the most tortuous sinus may be followed, will be a surprise to those who have relied upon other methods.

I have secured very good results from the use of nitrate of silver crayon upon the hypertrophied gum tissue, when caused by the irritation of salivary secretions. After thoroughly cleansing the teeth, dry the gum margins as thoroughly as possible, then apply the crayon almost to the point of cauterization. I have rarely found the second application necessary. For *cancrum oris* or common canker sore, touching it with pure nitric acid will prove the best and most effectual remedy. I have never seen a case where one application did not effect a cure.

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C. N. JOHNSON, L. D. S., D. D. S.

THE WORLD'S COLUMBIAN DENTAL CONGRESS.

At a meeting held in Chicago at the Grand Pacific Hotel the Executive Committee of the Congress unanimously elected the following officers:

President, Luther D. Shepard, A. B., D. D. S., D. M. D., Boston, Mass.; Vice Presidents, W. W. H. Thackston, M. D., D. D. S., Farmville, Va.; W. H. Morgan, M. D., D. D. S., Nashville, Tenn.; W. W. Allport, M. D., D. D. S., Chicago, Ill.; A. L. Northrop, D. D. S., New York, N. Y.; Edwin T. Darby, M. D., D. D. S., Philadelphia, Pa.; C. S. Stockton, D. D. S., Newark, N. J.; H. J. McKellops, D. D. S., St. Louis, Mo.; J. H. Hatch, D. D. S., San Francisco, Cal.; J. Taft, M. D., D. D. S., Cincinnati, Ohio; J. B. Patrick, D. D. S., Charleston, S. C.; W. O. Kulp, D. D. S., Davenport, Iowa, and John C. Storey, M. D., D. D. S., Dallas, Texas. Secretary General, A. W. Harlan, M. D., D. D. S., Chicago, Ill. Assistant Secretaries, Geo. J. Friedrichs, M. D., D. D. S., New Orleans, La.; Louis Ottofy, D. D. S., Chicago, Ill., and Ralph Dillon, D. D. S., Chicago, Ill. Treasurer, John S. Marshall, M. D., Chicago, Ill.

THE HERBST METHOD OF TREATING PULPS.

It may scarcely seem scientific to oppose any special line of practice which is apparently based on experimentation by mere

arguments brought forward in the absence of experiments. And yet we cannot forbear taking issue in the main with the practice of Dr. Herbst as outlined in a paper read by Dr. C. F. W. Bödecker before the New York State Dental Society. Briefly stated Dr. Herbst's treatment of pulps is as follows: Cobalt is applied and allowed to remain from two to three days. Then the coronal portion of the pulp is amputated with a large round bur in the engine, leaving the root canals filled with pulp tissue. Over this pulp stump tin or gold foil is burnished by means of a rotary instrument in the engine. Then the remaining portion of the cavity is filled in the usual way.

We cannot see any reason for believing that cases thus treated will be successful. In the first place cobalt will *kill* a pulp. It does not simply paralyze the coronal portion, but it destroys it to the apex of the root. It accomplishes this just as effectively as does arsenic employed in the usual form. If Dr. Herbst would wait one or two weeks after the application, instead of two or three days, he would find the pulp as dead as the proverbial "door nail." For more than a year we have used nothing but cobalt in our practice for the destruction of pulps, and its action is precisely similar to arsenious acid, with the possible exception that its application does not ordinarily cause pain.

We all know, or ought to know, the result of leaving the canals filled with dead pulp tissue and filling over it. The use of corrosive sublimate, as recommended, would probably tend to prevent sepsis for a time—in fact, the prolonged use of this agent will mummify a pulp stump quite effectively. But even a mummy is not safe in the root of a tooth. As soon as it absorbs moisture through the apex it is a mummy no longer and soon becomes an abiding place of putrefactive germs.

It is our conviction that the dentist who follows this practice extensively will reap a lamentable crop of failures, and the chief danger lies in the fact that it is advocated by reputable men who have sought to prove its propriety by experiments. It seems to us that time enough has not elapsed to render the experiments conclusive in such a line of practice as the treatment of pulps. A dead pulp is a treacherous enemy. It will often lie in wait a long time before manifesting its malignity.

We wish to warn the more confiding members of the profession against this new method. We believe it will prove on a line with

some of the other fads of the past—in truth, it reminds us strongly of the craze which struck some very reputable members of the profession years ago when arsenic was hailed by them as the desideratum for the treatment of sensitive dentine. We will draw the mantle of charity over the scenes of those days in offices where this practice was followed.

We hope that those who are disposed to look with favor on this new treatment of pulps will “make haste slowly.” Mistakes have been made before.

C. N. J.

NORTHERN ILLINOIS DENTAL SOCIETY.

The meeting of the Northern Illinois Dental Society, at Rockford October 26 and 27, was one of the best in its history. About fifty dentists were present and the greatest enthusiasm and good feeling prevailed. Eight interesting papers were read, which will appear in the DENTAL REVIEW. One of the most interesting of the clinics was on the use of noncohesive and cohesive gold by the venerable Dr. Allport, of Chicago; Dr. Brophy removed a tumor of the upper maxilla; Dr. Allen, of Freeport, introduced a gold filling, using the Bonwill mallet; Dr. Ames demonstrated the use of the oxyphosphate of copper; Dr. Taggart exhibited a new furnace for use in crown and bridge work. Among the new appliances was a neat, small, but powerful motor, recently put on the market for dental use, by the Chicago Electric Motor Co. The following are the officers for the ensuing year: E. R. Warner, Chicago, President, O. A. Chappell, Elgin, Vice President; J. W. Cormany, Mt. Carroll, Secretary; M. R. Harned, Rockford, Treasurer; W. P. Richards, Elgin, Member of the Executive Committee. Aurora was selected as the next place of meeting, and in view of the World's Fair at Chicago, the selection of the time was left in the hands of the executive committee. One good feature of the meeting was the appointment of a committee of ten, who are to attend the World's Columbian Dental Congress, make individual reports of its proceedings, and afterward make a report to the society. Rockford has now the best hotel in the state, outside of Chicago; “The Nelson,” recently opened, is perfect in its appointments, having been constructed at an expense of \$250,000. The Illinois State Dental Society will do well to select Rockford as its place of meeting at the earliest opportunity.

A LIBRARY.

Dr. H. J. McKellops, of St. Louis, has been for years collecting a dental library which will ultimately belong to the dental profession. He is desirous of purchasing books, pamphlets or journals if the owners will simply give the title, author's name and year of publication.

This very commendable action of Dr. McKellops should bring tenders to him of many isolated, worthless books and pamphlets which in a collection would be of great value. Look over your old books and journals and send a description to him at 2630 Washington Avenue, St. Louis, Mo.

DOMESTIC CORRESPONDENCE.

PORTAGE LA PRAIRIE, MANITOBA, CANADA.

September 27, 1892.

Open letter to Dr. T. W. Brophy, Dean of Chicago College of Dental Surgery:

DEAR DOCTOR: You will remember my writing to you for the latest announcement of the Chicago College of Dental Surgery, and prompt as usual you sent it by return mail.

My object was to find out when the Practitioners' Course took place next year, and I must say I was very much disappointed to find it began on the 11th of April. It would certainly be more to my interest and also a great many practitioners had it taken place later on, especially for 1893.

As there will be a large influx of dentists to the city to attend the greatest gathering of dentists that has ever taken place, viz.: the Dental Congress. It would, in my opinion, be very opportune to have the Practitioners' Course just before or after the Congress. Say in the month of July. You would then have a very large class, replenish the coffers of the college, and I take it the practitioners would hail the opportunity with delight to attend the course while in the city.

I intended to visit Chicago next year and take in the Dental Congress, and would like while there to take the Practitioners' Course to better fit myself in one or two special branches in our profession, thereby, as the saying is, killing two birds with one

stone, and I think there are more than one in this land of the *maple leaf*, besides from all parts of the United States who would attend if the course were held in July or August. There are a great many dentists who could not afford to make the two trips in the same year.

The course for 1893 could be called "The Columbian Dental Practitioner's Course." If the date could not be changed, how would it do to hold a special course and term it as above. I merely throw out the hint and hope something will evolve from it. I believe there are a great many old dentists, I mean practitioners, who never had an opportunity of attending college, who ought, in justice to themselves and their patients, to take the course, and who no doubt would do so, if they could while in the city during the Columbian Congress.

I hope, dear doctor, you will pardon me for taking the liberty of addressing you this letter. I do it in the interest of dentistry in general and also of my professional brothers who are unable to keep pace with the gigantic strides which the profession is making in the present day, unless they take some such course.

Yours very truly,

R. H. ROBERTSON, D. D. S.

REPLY.

R. H. Robertson, D. D. S.:

DEAR SIR: Your letter to the DENTAL REVIEW has been handed to me; it expresses the opinion and desire of many dentists situated as you are, and it gives me pleasure to make the following reply:

Several months ago the college decided to give a series of courses to practitioners during the summer of '93. Each of these courses will continue three weeks, and one course will follow another up to October 1st.

The instruction given during these courses will embrace all the latest and most approved methods pertaining to the practical part of dentistry. Special attention will be given to such branches as crown and bridge work, the construction of metal plates, the manipulation of the various materials in filling teeth, the best methods of making inlays, methods of regulating teeth, the use of all the latest medicaments in the treatment of diseased conditions,

and the proper performance of operations in cases calling for surgical interference. The courses will be so arranged that any one who desires to attend may enter any course during the summer.

The deep interest shown in this post-graduate work is evident, from the number of letters we have received similar to your own.

Very truly yours,

TRUMAN W. BROPHY.

REVIEWS AND ABSTRACTS.

NOTE BOOK FOR DENTAL STUDENTS (DENTAL ANATOMY AND PHYSIOLOGY), BY JAMES F. RYMER, M. R. C. S., L. D. S., D. D. S., SECOND EDITION, LONDON. PUBLISHED BY C. ASH & SONS, LONDON, 1892.

From a casual examination of this little note book we are led to think that it will be quite useful to the student, especially during lecture hours.

It seems quite up to date and is very handy in size, with good type and scarcely any errors in its make-up, with a good index. The work is scarcely fitted for more than the undergraduate work of a student, and this will be the field of its greatest usefulness.

LA REVISTA MEDICO CHIRURGICA is a new journal in the Spanish language, published in New York by J. Shepherd Clark Co., designed to circulate in the Spanish American countries among physicians, surgeons, dentists, druggists and pharmacists. The first number is very interesting, the dental portion being contributed by Drs. R. B. Winder and Geo. Evans. The journal is the Spanish official organ of the Pan-American Medical Congress to be held in Washington, D. C., September 5, 1893.

PAMPHLETS RECEIVED.

The desirability of extraction of the six-year-old molar, J. B. Davenport, Paris, with discussions thereon at the British Dental Association, 1892.

De la Syphilis et de ses Manifestations Buccales, des dangers de contagion attachés à la profession de Médecin-Dentiste. Thèse présentée pour l'obtention du grade de Médecin-Chirurgien-Dentiste, par Charles Fleischmann, Assistant de clinique à l'École

dentaire de Genève, Genève, Imprimerie Centrale Genevoise, Boulevard James-Fazy 17. 1892.

Southern Women in the Recent Educational Movement in the South. Reverend A. D. Mayo, M. A., Government Printing Office.

History of Higher Education in Massachusetts, by George G. Rush, Ph. D., *Ibid.*

PRACTICAL NOTES.

MATRICES.*

BY GEORGE J. DENNIS, M. D., D. D. S., CHICAGO, ILL.

Matrices are instruments which may, and do, find a practical application in the hands of a majority of the more progressive dentists. They have become necessities where the insertion of gold fillings on the distal approximal sides of the molar and bicuspid teeth is practiced, and no dentist's stock of instruments can be said to be complete until it contains a matrix of some form. Their usefulness has been questioned again and again. They have been the subject of as much discussion as any instruments with which we have to do, yet they still retain their place among the more useful instruments at our command. They have been highly lauded, and just as severely condemned, until it remains for each one to decide for himself whether they shall be useful in his hands.

The chief advantages possessed by matrices, are their economy of time, labor, and of the suffering of the patient, together with the possibility of performing operations which would be precluded without their aid.

It is claimed that although matrices do possess these qualities, their disadvantages are so great that few operations performed with them are successful. The reasons stated are that the borders, especially cervical borders, are not thoroughly filled, owing to the impossibility of filling angles well, that if gold is used as the filling material, it cannot be placed securely in the cavity, or condensed perfectly against the tooth wall, because of the yielding of the walls of the matrix; that there is too great a danger of fracture of the enamel margins, and that a proper contour of the tooth, necessary to the preservation of the interdental space cannot be produced.

* Read before the Northern Illinois Dental Society, Oct. 27, 1892.

That there is a certain truth in these statements against the use of matrices, cannot be doubted. They cannot, however, with justice, be said to be the fault of the matrices, but rather must be attributed to careless manipulation on the part of the operator. The reason for so much discussion in regard to their usefulness, from the standpoint of the writer, lies in their proper or improper application to each individual case. In the application of any instrument good judgment is necessary and the conditions as they present themselves must be studied. This is especially true of the application of matrices; for instance, the width of the space between the approximating teeth where the cavity is situated, the extent of the cavity toward the neck of the tooth, the lateral extent of the cavity, whether the lateral margins are closely together or some distance apart, the shape of the tooth, whether bell crowned or not, the space on the opposite side of the tooth operated on, the occlusion, and the loss of one or more teeth in the immediate vicinity, as well as other conditions present in each case—all those must be considered.

To be properly used, matrices should be made of some tough, flexible and elastic material, and as thin as possible. When placed in position they should conform themselves approximately to the shape of the teeth as they existed originally; they should be capable of being held firmly in position in such a manner that there can be no slipping or moving from the beginning to the end of the operation; they must be springy, and yield slightly to lateral pressure, as the gold or other material is impacted against them. It is self-evident that they should be wide enough to extend beyond the cervical borders, and in most cases should extend beyond the morsal surfaces. The surfaces looking into the cavity should be well polished to act as reflectors, and to give a finished surface to the filling. Polished surfaces also permit ready removal at the close of the operation. If matrices possess these qualities, and are then placed in position without pressure upon the enamel margins, and are held in position tightly enough to prevent slipping, and yet yield sufficiently to allow the filling material to be forced slightly between them and the margins of the cavities; if the enamel margins are prepared according to the principles announced by Dr. Black, the matrices will prove invaluable assistants, and he who uses them will find an economy of time, labor and of nervous energy which will certainly be appreciated.

On the other hand, if matrices are made of an inflexible, unyielding metal and unpolished; if they are held tightly in position with their surfaces, in close contact with the borders of the cavity, or so loosely that they slip and slide from their original position; if the enamel margins are either extensively beveled, or thin edges of enamel are permitted to remain; if no consideration of tooth form has entered into the shaping of matrices; or if the filling material is not well impacted against the tooth and against the walls of matrices; if the sides of the filling have not been carried up a little higher than the center as the operation has progressed, then failure in the use of matrices will be the inevitable result, and these instruments will be condemned when it has been the operator who has been at fault.

These instruments must be used carefully and skillfully, and each case must be studied with regard to the conditions present. If this is done, matrices will receive the approval of all dentists, and the results will justify their more extensive application.

In conclusion your essayist has prepared models illustrating various forms of matrices, which have proven useful in his practice. They are inventions of Dr. D. B. Freeman, Dr. C. E. Esterly, of Lawrence, Kas., Dr. H. P. Booth, of Wisconsin, Dr. J. H. Reed, of Lancaster, Wis., Dr. Call, of Peoria, Ill., Dr. Brophy, Dr. Guilford, of Philadelphia, Dr. Hewitt, of Chicago, Dr. Woodward, Dr. Weirich, Dr. Creager, Dr. Pinney, and Dr. Jack.

SOUTHERN ILLINOIS DENTAL SOCIETY.

REPORT OF THE SUPERVISOR OF CLINICS.

Mr. President and Gentlemen.—As your Supervisor of Clinics I beg to submit the following report:

Dr. A. H. Rainey, of Centralia, demonstrated the use of a preparation of his own for painless minor surgery. The medicine was used hypodermically in the gums of several patients, when the tissues were in various stages of inflammation, and the roots of several teeth removed, to the general satisfaction of those operated for.

The formula he claims contains no cocaine, though the active principle of his compound is similar in effect thereto. There was no nausea apparent.

Dr. R. H. Canine, of East St. Louis, filled the posterior surface of a right superior first bicuspid, with cement and amalgam mixed together. The pulp was slightly exposed in process of excavation and was thought by the operator, not to be in favorable condition for immediate filling, but was completed by the advice of our president. The Supervisor thinks the pulp should have received more careful treatment. Patient was suffering some when dismissed. Patient's name is C. E. Burnett.

Dr. T. W. Pritchett was to fill a pulp canal, but upon investigation found a too copious purulent discharge through apical foramen for immediate filling, and after disinfection the canal was dressed with eugenol and patient dismissed.

In this connection I would mention a very unique contrivance of Prof. J. C. Blair, of Louisville, Ky., with which the above root canal was disinfected by fumigation with iodoform, and which is so constructed as to pass atmosphere overheated iodoform.

The clinic of your humble servant, "Painless Extraction of Pulp," could not be had for lack of suitable case, and will be exhibited on some future occasion.

Other clinics were not had on account of the absence of operators. (God forgive 'em.)

The clinic of Dr. G. A. McMillen, "Making and Adjusting a Bridge before the Society," was skillfully done and consisted of a porcelain faced first bicuspid suspended between a porcelain faced cuspid which was fixed with a platinum dowel post and a hollow second bicuspid gold crown fixed with cement. The clinic was performed under difficulty, as the plate had to be hammered from coin and platinum pins and posts.

Of appliances there was on exhibition by myself a new blow-pipe designed for the use of gasoline-gas, for jewelers and dentists situated where other kinds are not available.

Dr. T. W. Pritchett showed us how to adjust a clamp in connection with napkins and other white substances calculated to obviate the use of the dam, in short operations, which reflects no light, and serves at times to darken the oral cavity.

J. G. DIXON, *Supervisor of Clinics.*

MEMORANDA.

Have you used Thio-resorcin ?

Dr. George H. Chance was in Chicago recently.

Dr. D. R. Jennings, of Cleveland, spent a week in Chicago recently.

Col. W. J. Younger, of California, was in Chicago during dedication week.

Mr. O. H. Fox, class of '61, Dental School of London, was in Chicago recently.

The dentists of Rockford, turned out to a man at the recent meeting held in that city.

Dr. S. B. Brown, of Fort Wayne, Ind., was a visitor to the dedication ceremonies in October.

A dental college for women will soon be opened in Stockholm, Sweden. Dr. Elena Lenin will be the dean.

Dr. T. E. Weeks, of Minneapolis, and G. W. Dennis, of La Salle, were in the World's Fair city recently.

The DENTAL REVIEW will issue a daily edition during the session of the World's Columbian Dental Congress next year.

Phenyl acetic acid. Internal antiseptic in ten drop doses, dissolved 1 to 6 in alcohol in 1 oz. water. Used locally to paint ulcers and patches in the mouth.

Mrs. Kate C. Moody, formerly of Mendota, Ill., has permanently removed to 328 S. Spring St., Los Angeles, Cal. Dr. J. D. Moody, who is still located at Mendota, also intends to locate in Los Angeles eventually.

Camphoric acid, colorless crystals, $C_8H_{14}(CO.OH)_2$. Soluble in alcohol ether, fats 50, oils 50, sparingly in water. Applied to ulcers in $\frac{1}{2}$ to 1-2 per cent. Paint the surface with a pencil. Price, 80 cents per oz.

Acid cinnamic. $C_6H_5.C.H.C.N.C.O.OH$. Soluble in hot water, alcohol ether. Insoluble in cold water. Used as a spray in five per cent alcoholic solution, or in emulsion in a neutral oil. Price per oz., \$2.

Dr. Geo. Martin, of Oakland, Cal., recently passed through Chicago on his way to Oakland, having just returned from Calcutta, India, where the prospects for a dentist were not as glorious as they had been represented.

Among the most remarkable inventions at the recent paper exhibit at Berlin was a set of paper teeth made by a Lubeck dentist in 1878. They have been in constant use for more than thirteen years, and show absolutely no wear whatever.

Among recent visitors to Chicago were: Drs. L. S. Davenport, or Moorhead, Minn., T. E. Weeks, Minneapolis, F. H. McIntosh, Bloomington, Ill., J. W. Cormany, Mt. Carroll, Ill., C. A. Kitchen, Rockford, Ill., and R. M. Pearce, of Rock Island, Ill.

Prim, a chemical expert, has determined by scientific investigation that the air of London is purest at about thirty or forty feet from the ground; lower than that the dust is encountered, and higher than that the smoke from the chimneys reaches.

CATCHING'S COMPENDIUM for 1892, will be out on time immediately after the holidays. The energetic editor is hard at work on the volume, which will be one of the souvenirs of America that our transatlantic friends can carry home with them next year.

MORE APPROPRIATE.

Shallow: "Why, just read that sign: 'Dental Parlors.' Isn't it absurd to call a dental room a parlor?" Deepe: "Why, it is probably the painter's mistake. He meant drawing room."—*Boston Courier*.

Dr. J. A. Houser, sixty years old, a dentist, from Charleston, W. Va., who was in the city attending the dedicatory exercises, dropped dead in front of 527 Wabash avenue about nine o'clock in the morning. It is supposed that death was caused by heart disease. The body was taken to the morgue.

FOR OZÆNA.

Iodol, tannic acid and borax are to be mixed in equal parts and used as a snuff five or six times a day. As improvement is noted the snuff is to be used three times daily.

CALIFORNIA STATE BOARD OF DENTAL EXAMINERS.

At the last annual meeting, Aug. 4th, of the California State Board of Dental Examiners the following officers were elected: J. L. Asay, M. D., of San Jose, President, and J. D. Hodgen, D. D. S., of San Francisco, Secretary.

The new Chicago University, with its \$5,000,000 to insure its success and perpetuity, seems to be fully alive to the importance of university extension, and starts out with a well-organized system with a large number of centers established throughout the west and northwest. This is generally understood to be a means of extending as far as can be the benefits of education to people at their homes.

So many people are found whose educational privileges were not what they wished in earlier days, and who are now glad to avail themselves of these extension privileges to better inform themselves in almost any direction they may choose. The studies or readings are so arranged that even the busiest of men can employ a few moments each day in improvement in the direction most desired, and it is surprising what wonderful results can be obtained by a half hour or an hour so spent each day.

In the specific study of dentistry and sciences collateral thereto, under such a system requires a course especially arranged. This the Post-Graduate Dental Association falling into line with the popular idea of home study for men settled and absorbed in their business and professional cares, is doing for the dental profession. It is a worthy movement, and is being encouraged on every hand. Subscribe to the course and read whether you are ambitious for the honors of their degrees or not. Every reader will be a better man and dentist, and that should be inducement enough.

How many men we all know who have gained a wonderful knowledge entirely by such methods, and without guide or direction in such studies, and limited in quantity and quality of books, became men of fame and renown. How much bet-

ter can such things be accomplished under competent direction and advice as to what to read and how.

AN IMPOSTER.

It has just come to my notice that the vender of a certain extensively advertised local anæsthetic has been using my name, (possibly others also), to further his sales. He professes to have a letter from me containing a recommendation of the preparation and an order for several ounces.

To be perfectly plain the man is a liar. There is no other word for it. I have never used the preparation, have never seen it, have never ordered any of it. I do not use a compound for local anæsthesia, the contents of which are kept secret; I do not impose on my friends by inducing them to use it; I do not write quack recommendations; I have never written this man at all.

C. N. JOHNSON.

FACIAL NEURALGIA.

Professor Liebrich recommends the following :

R	Butyl-chloral,	gr. xl to lxxv
	Alcohol rect.	f 3 ijss
	Glycerini	f 3 v
	Aquæ dist	q s Ad. f 3 iv
M	Sig. from two to four teaspoonfuls.	P. R. N.

SOUTHERN ILLINOIS DENTAL SOCIETY.

The Southern Illinois Dental Society met at Mount Vernon, October 18th, with President C. C. Corbett in the chair.

The society held an interesting session. The clinics were instructive, the papers interesting and ably discussed. Edwardsville was selected as the next place of meeting.

The following were elected as officers for the ensuing year : J. G. Dickson, of McLeansboro, President; W. H. Damron, of Mt. Vernon, Vice President; L. B. Torrence, of Chester, Secretary; L. Betts, of DuQuoin, Treasurer.

Time of meeting, third Tuesday in October, 1893, subject to change by executive committee.

L. B. TORRENCE, D. D. S.,

Secretary.

We do not hesitate to say there are but few men in dentistry who would not be benefited by a systematic course of reading such as has been and will be further inaugurated by the Post-Graduate Dental Association. The A course in particular, at least so far as Black's Anatomy of the Human Teeth is concerned, forms one of the most essential features in the proper understanding of most operations the dentist is called upon to perform. It is only a few years since such a book was in existence. It is to be regretted that many practitioners of dentistry have but an obscure idea of the intimate structure and internal formation of the organs they are called upon to care for. Any one whose dental training and education in this direction has been neglected from any cause should never consider it too late to mend; and to the graduate whose college training embraced and made duly important this work as a fundamental principle, a review of Dr. Black's work is always refreshing and beneficial.

One hour a day systematically employed in such reading at home will do

more to fix in the mind desirable knowledge than the cramming which is necessarily a part of a college course where so much has to be compressed into the time allotted. We should advise almost any one inclined to take up a course of reading to take the A course by all means as one which cannot fail to be of great benefit.

ANCIENT HINDOO VACCINATION.

At a meeting of the Epidemiological Society (Lancet, Feb. 29, 1892), Dr. Pringle quoted a remarkable passage from an ancient Hindoo work, which showed that true vaccination was known and practiced in India centuries before the birth of Jenner: "The smallpox produced from the udder of a cow will be of the same mild nature as the original disease, * * * the pock should be of a good color, filled with a clear liquid, and surrounded by a circle of red. * * * There will be only slight fever of one, two, or three days, but no fear need be entertained of smallpox so long as life endures." Pasteur's attenuation of virus by successive cultures has been applied in India for hundreds of years to inoculations with variolous lymph, which the document in question directed to be taken from "the most favorable cases," and he has seen series of such selected inoculations in which there was no general eruption, and the local phenomena were scarcely distinguishable from those of vaccination.—*Medical and Surgical Reporter*.

FEMALE ASSISTANTS TO DENTISTS.

"It is to the young woman of good breeding who has been favored with educational advantages, who has no special artistic gift of nature which she can cultivate, that the opportunity opens to become a most useful adjunct to an honorable profession and fill a demand in the great industrial hive for which she is eminently fitted." That is what Dr. Norman W. Kingsley, late dean of the New York College of Dentistry, a man of world-wide fame in the profession, said to a New York *Sun* reporter of the position of assistant in the office of a dentist. A place of this kind offers one of those rare openings where a cultivated woman, thrown suddenly upon her own resources, may enter, without special preparation, upon a suitable occupation. The question of woman assistants has been attracting considerable attention among members of the dental profession recently. The woman assistant is to the dentist what the nurse is to the doctor. She possesses those qualities necessary to supplement his and make his complement of service. In a prolonged case of treatment, after the doctor has devised the proper methods to pursue, it belongs to the assistant to bestow the daily attention, remove the splints in cases of irregularity, allay the inflammation that may arise, and give a full measure of sympathy. She sees the patients as they come in, makes all the appointments, and attends to the correspondence and books. She relieves the doctor's cares in many ways, enabling him to devote his time to the highest branches of the profession. In some instances she becomes expert enough to carry on the practice successfully during his absence.

PROGRAMME OF THE MINNEAPOLIS DENTAL SOCIETY.

Officers—Dr. F. E. Hansen, President; Dr. J. W. Pemberthy, Vice President; Dr. G. W. Avery, Secretary; Dr. C. M. Colby, Treasurer.

Executive Committee—Dr. W. N. Murray, Dr. M. G. Jenison, Dr. L. D. Leonard.

Membership Committee—Dr. F. H. Brimmer, Dr. C. L. Sargent, Dr. H. B. Tillotson.

September 21.—Dr. F. E. Hansen, "President's Address."

October 19.—Dr. W. A. Spaulding, "Dentistry in Europe and America." Discussion opened by Dr. VanDuzee, St. Paul, Dr. Loughridge.

November 16.—Dr. T. E. Weeks, "Conservation of Pulpless Teeth." (Illustrated). Discussion opened by Dr. Stearns, Zumbrota, Dr. Dickinson.

December 21.—Dr. E. F. Clark, "What is best." Discussion opened by Dr. Parker, Dr. Pemberthy.

January 18.—Dr. E. H. Angle, "An Hour with the Fathers of Dentistry." (Illustrated.) Discussion opened by Dr. Bausman, Dr. Reid

February 15.—Dr. F. E. Twitchell, "The Camera in the Professions." Discussion opened by Dr. Sudduth, Dr. Colby.

March 15.—Dr. W. X. Sudduth, "Infection." Discussion opened by Dr. Bailey, Dr. Leonard.

April 10.—Dr. A. E. Peck, "Art and Utility." Discussion opened by Dr. Knight, Dr. St. John.

May 17.—"Experiences in Professional Life." Election of Officers.

Reserve Papers—Dr. W. P. Dickinson, Subject not announced; Dr. F. H. Brimmer, Subject not announced.

OBITUARY.

C. M. WILKIE, D. D. S.

A cablegram from Paris to relatives in this city announced the death of Dr. Charles M. Wilkie yesterday. This will be sad intelligence to the many friends of Dr. Wilkie who know him well and who will not easily forget the generous hospitality which he so much delighted to extend to his American acquaintances, and of other nationalities in Paris.

Dr. Wilkie's native place was in Northern New York, near Watertown.

Some three years prior to his majority he entered the dental office of Dr. Coe, Jefferson Co., N. Y. There he received his initiary training in the profession of his choice and a year or two later, he entered the Pennsylvania Dental College, where he graduated. In the winter of '61 he located in Aurora, Ill. He continued in the practice of his profession here till the fall of 1878, when he sold out his practice and went to France, locating in Paris finally.

During the last twelve years he has occupied a prominent place among American dentists in that city. His success was phenomenal in building up an extensive practice.

He leaves a widow and two grown daughters.

FREDERICK R. SUGGITT, D. D. S.

WHEREAS: Death has again invaded the ranks of the Odontographic Society and taken from our midst an esteemed member, one who but recently finished his

dental education and began his professional life, be it.

Resolved, that in the death of our friend and colaborer, Dr. Frederick R. Suggitt, one has been taken whom it has been our pleasure to know but a comparatively short time; but one who has won our respect and esteem as an earnest upright man, and a devoted member of the dental profession, and whose loss we most deeply regret. And be it further

Resolved, that our sincere sympathy is hereby extended to the family and friends, who have been so suddenly bereft of a dear one, and that these resolutions be spread upon our record and copies sent to the several dental journals.

(Signed)

DON M. GALLIE,
R. B. TULLER,
E. A. ROYCE,

} *Committee.*

H. H. SILLIMAN, M. D., D. D. S.

As we go to press we learn of the sudden death of Dr. H. H. Silliman, of Chenoa, Ill.

He was thrown from his buggy while driving a spirited horse and only survived the accident for a few hours.

He was a graduate of the Chicago College of Dental Surgery, class of '89, also of Rush Medical College '91, and was engaged in the practice of dentistry at Chenoa.

We deeply deplore his loss. He was a young man full of promise and occupied a high position in his profession for one so young.

We condole with his wife and family so suddenly bereft of the idol of their affection and adoration.

THE DENTAL REVIEW.

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CHICAGO, DECEMBER 15, 1892.

No. 12

ORIGINAL COMMUNICATIONS.

LOCAL ANÆSTHETICS.*

BY E. L. CLIFFORD, D. D. S., CHICAGO, ILL.

Mr. President and gentlemen of the Northern Illinois Dental Society.—“Perhaps no result from the field of scientific experimentation ever came upon the world more suddenly, or more completely fitted for immediate employment than the discovery of surgical anæsthesia. Its advent was heralded by no signals which gave notice of the mighty power for good which it was destined to exert. Its presence, after the first few successful demonstrations, seemed as natural as the sunlight, and when experience had more fully known the laws which govern this condition, its use became almost immediately established in the community which witnessed its birth. Those who were instrumental in its introduction have mostly passed away, and a new generation has since come upon the scene.”—Upon occasions like this, and when we are favored with such audiences as are yearly furnished by this society, it is not deemed important or necessary to enter minutely into historical facts. Suffice it to say, our specialty glories in the acknowledgment by other branches of medical science that to dentistry is accorded the credit, and when the five great surgeons of the east, assisted by Dr. Morton, performed their first capital operation in the Massachusetts General Hospital without pain, the long procession passed out and down the stairways little realizing then the value of the gift bestowed upon mankind, and which, can hardly now, even after the lapse of nearly half a century, be suf-

*Read before the Northern Illinois Dental Society, October, 1892.

ficiently appreciated. However much they may have differed on minor points, it was conceded that this operation (an amputation of the thigh) was a demonstration, which, from its magnitude, would carry to the scientific world a conviction, not merely of a possibility, but of the certainty, safety, and the completeness of the insensibility capable of being produced during the severest surgical procedures. And although the *first* operation, in which the attempt was made to produce anæsthesia by the administration of ether was unsuccessful, we are of the opinion that the large painting executed by Hinckley, of Washington, D. C., the subject of which was this memorable incident in the history of anæsthesia, should be secured and exhibited at the approaching World's Columbian Dental Congress, as a reminder that to the new world, and to the specialty of dentistry in particular, belong the glories which hover around this great boon to suffering humanity.

The first formal presentation to the world of the successful use of artificially produced anæsthesia in a capital operation, fell to the lot of the late Dr. Hy. J. Bigelow, of Boston, of whom Dr. Oliver Wendell Holmes speaks as follows: "He had the sagacity to see the far-reaching prospects of the new discovery, the courage as well as the shrewdness to support the claims of the *adventurous dentist's* startling, at first almost incredible announcement. Every possible effort was made to dislodge the infant anæsthesia from its cradle in the Massachusetts Hospital, but there remains the fact that all over the wide world patients were shrieking under the surgeon's knife and saw—operator and victim alike ignorant of the relief in store for them, at the very moment when Dr. Bigelow was unfolding in my library the first paper ever written on the subject, and saying to me as he did so, that within a fortnight the news of the discovery would be all over Europe." The gift of the profession which forms the true link between science and philanthropy, a profession distinguished alike for its scientific attainments and its usefulness.

The introduction of ether as an anæsthetic into the practice of surgery found a most interesting epoch in the history of medical science, completely revolutionizing the methods once in use, and introducing to operative surgery a range of delicate manipulation that is the marvel of our generation. The safety of the popular anæsthetics, ether and chloroform, is so well established as to need no advocacy of their claims, and when in competent hands, under

proper conditions, their use may be pronounced as generally harmless. The medical profession, thus armed with potent anæsthetics, the blessed effect of painless operations were soon apparent ; occasional fatalities however followed their free use, and an alarm of warning was sounded, a sense of fear was awakened, and very soon modifications were devised by various medical authorities. In London, the A. C. E. mixture found its birth, and in Vienna, another favorite combination first saw the light.

Possibly no one field of surgery has done more to popularize and bring into a general, and I might almost say a common use, anæsthetics, than the diseases of women. In this field their application is certainly most general and humane. Under their influence the most wonderful operations in laparotomy have been made possible, and the results in the relief from suffering, and the radical cure of disease, are among the triumphs of modern surgery. The use of anæsthetics to mitigate the pains of labor, met with stout opposition from the conservative element of the profession, and for a long time it found but little favor among some of the leading obstetricians, among whom were Meigs, of Philadelphia; Barnes, Montgomery and Ramsbotham, in England; and Seebold and Scanzini, in Germany. In 1853, however, Queen Victoria gave a new impetus to the practice by her great influence in submitting to its use in the birth of Prince Leopold, and again in 1857 at the birth of the Princess Beatrice. The result of this notable example did much to make the use of anæsthetics popular in parturition."

It has been said that "life is the greatest of human blessings," and "health the greatest stimulant to earthly enjoyments." To preserve the one and to procure the other is the object of all work in the profession of medicine, but unfortunately "the goal of our ambition and desire is almost at the end of human capacity." "It is doubtful if man's intellect, great as it is, can ever compass all that he so earnestly desires, yet by constant and faithful work he may approach nearer and nearer to its consummation." "The science of medicine has kept pace with, if it has not outstripped all other sciences." "In every part of the habitable world blessed with the light of civilization, active, busy members, endowed with high culture, and incited by the noblest resolves, are enthusiastically engaged in unraveling the mysteries of disease and seeking the means and methods of treatment for the mitigation and relief of suffering and the prolongation of life.

To the specialty of dentistry is accorded the supervision and care of that portion of the human organism, second in importance to no other portion, in becoming a factor for good or evil in promoting this desired end. Unfortunately for this division of the field of labor, pain, and suffering has been in the past almost a synonym for the dental office. It has caused many valuable patients to slip through our hands; it has been the cause of many healthy and vigorous constitutions descending the ladder of physiological perfection, until finally a system was undermined, comfort depreciated, and perhaps life itself shortened because of the fear felt of the operating chair, and a consequent lack of these organs so very essential to perfect mastication, digestion, and nutrition.

To obviate this condition of affairs an immense amount of brain substance has been spent in order that the public would find the dental office freed of many of its terrors. It was this same motive that prompted the many dentists that have evolved from nature's storehouses the gift that has already been launched upon the professional sea. It is this same motive that is now inciting to action, and prompting the workers in the field to-day, to bring forth from that engorged womb still greater gifts that will tend to obviate the disagreeable points in practice. It will follow then as a natural sequence that perfection has not been reached. We must acknowledge at this time the many defects and objections to the system of general anæsthesia as understood by us at present, and in fact it would seem as almost an unsurmountable objection in dental practice that any agent used for the purposes of our specialty should have the power of obliterating the consciousness of our subjects. The very nature of our surroundings, and the educational status of graduates who have received our degree in the past, forbid its general acceptance and use. Hence busy and searching minds are at work to find a pure and safe agent that will act only upon the parts to which it is applied. Such agents are known to us as local anæsthetics, and such conditions are recognized under the head of local anæsthesia.

In this field an immense amount of experimentation has been carried on in all the divisions of special practice, and may we not hope that when the perfect agent is at last found, that it too, like its illustrious progenitors, may claim for its birthright and home, the special division of dentistry? I say work has been carried on, with more or less success, in this line in the special

divisions and branches of medicine, for when we come to search the literature of general medicine we can but be struck with astonishment at the paucity of such articles at our command. The reason possibly is more evident than we would at first imagine. General practice does not deal so nearly to the domain of minor surgery as almost any of the different specialties and particularly so is dentistry, rich in the fact that almost every operation in the past has been more or less of a surgical nature and consequently has been accompanied with more or less pain and annoyance. We trust that such will not always be the case and we predict that it will not when we fully appreciate and acknowledge the relationship and the dependence of the special to the general.

Among the earliest processes brought to our attention for producing local anæsthesia may be mentioned the application of cold, or what is termed the freezing process. It was proposed and introduced by Dr. Richardson who described it as the application of a volatile liquid, having a boiling point at or below blood heat, in a state of fine subdivision or spray to the parts, resulting in a rapid evaporation of the volatile fluid, conjoined with so great an evolution of heat force from the surface to which the spray is applied, that the blood cannot supply the equivalent loss.

Momentary death, and consequent insensibility follows; restoration occurring when the spray is withdrawn and the blood again allowed to find its way through the tissues affected. The liquids used are absolute ether, rhigoline and bromide of ethyl. The rationale of its action being that the intense cold produced deprives the nerves of their power to transmit impressions to the sensorium. It has not been difficult to point out objections to this method. In the hands of the inexperienced it is easy to involve too great an amount of tissue or to force the freezing process to too great an extent in the tissues involved so that the life forces are not equal to the emergency and restoration to a normal condition impossible. Again the extreme pain attending the first application of the freezing process has been a barrier to its universal employment, as well as some unfortunate sloughs that the chagrined operator has been called upon to face. Other agents were periodically brought to notice, and varying results were heralded to an expectant and impatient profession, but since Koller rescued from oblivion and gave a practicable application to Neiman's discovery of 1860, the alkaloid cocaine has kept the experimental

world busy and our literature teems with their investigations—and if any here present wish an interesting subject to study—one laden with conflict and contradiction, I think their appetites can be fully appeased and satisfied with this potent, harmless (?) addition to our newer pharmacology. For instance, as late as 1884 we find a writer in the *London Lancet* making use of the following language: “The great excellence of cocaine consists in the limitation of its action to the tissues to which it is applied. No doubt other symptoms at a distance do result from the external application of the anæsthetic, but they are for the most part insignificant and by no means dangerous.” * * * “The contemplation of a few facts of this kind leads us to think of the Ultima Thule of anæsthetics as likely to be not one of the least splendid triumphs of science.”

The same writer goes on to say that “no doubt much remains to be worked out before the full value is given to this latest addition to our armamentarium, and before a full explanation of the mode of action of the drug in the one particular respect for which it is in so great a demand can be given.” And verily we add that in the light of later investigation and experience he prophesied well. In the ardent enthusiasm which attended the introduction of such a promising remedy it was not strange that extravagant claims should be made for it, nor that many should be disappointed in their attempts to verify its claims. In this way the possibilities of a new drug, and its permanent place as a therapeutic agent are determined. Cocaine has certainly proven of the greatest utility in affections and operations upon the eye and all mucous membranes—as the ear, larynx, oral and nasal passages, but it is subject to great limitation in its application to other parts, and we might say to the parts above mentioned, under certain pathological conditions. The anxiety felt in the specialty of dentistry for the possession of an agent that would rob the practice of the immense amount of prejudice which attaches to it, as a consequence of pain led to hurried and sometimes unfortunate applications of this agent. A substance possessing such power for good must of necessity be a substance that should be handled with care and skill. Like the introduction of the general anæsthetics, chloroform and ether, the use of cocaine as a local anæsthetic was destined to meet with dangerous and disastrous results, and this fact has followed as a bugbear at the heels of this brilliant and happy innovation; and yet

few of us have found this objection a sufficiently grave one to prove a barrier to its use.

Though we occasionally hear the note of warning, and here and there a fatal case has been reported, their proportion has not increased with the prevalence of the drug, while its use has become so universal among the specialists in particular that it is to be doubted, if there are many of the latter who could now be induced to do without it. In fact the subject of local anæsthesia, as practiced to-day by almost all specialists, can hardly be separated from the study of cocaine, as no new agent of any value has been introduced up to this time that has proven a more efficient local anæsthetic per se. The last number of the *Therapeutic Gazette* however informs us that a new coca base has recently been isolated by Giesel from the leaves of the small leaved coca plant of Java, which, if the experiment so far conducted can be taken as an indication, promises some interest to the profession in the future. According to this journal Liebermann has proved that this base is benzoyl and tropine, which bears no relation to the cocaine groups, but is, chemically, closely related to atropine, and the conclusions were, that, in its local action, the new alkaloid is a connecting link between the true local anæsthetic (cocaine) and the "anæsthetica dolorosa" of Liebreich.

In the paper here spoken of, which was read before the section of pharmacology and therapeutics in the British Medical Association, the author recounts nineteen experiments made with the hydrochlorate of tropin, the alkaloid itself being insoluble in water. (Note—For brevity the name "Tropin" is offered by the *Ther. Gaz.*) Of these 19 experiments, 5 were upon frogs; 8 upon rabbits; and 6 upon the human subject. The object of the experiment seems to have been to establish the difference of potential between tropin and cocaine.

The result of those experiments are recounted as follows :

On frogs :

1. Tropin is less than half as toxic as cocaine.
2. It produces local anæsthesia more rapidly.
3. Individual susceptibility to the drug varies but little, and so unexpected poisoning, from a small dose, seldom, if ever, occurs.
4. Recovery is quicker from tropin than from cocaine.
5. Symptoms of irritation do not follow its use.

Experiments on rabbits show:

1. But slight individual susceptibility to its toxic action. There is, however, some individual difference in the nerve centers most affected in different cases.

2. Tropsin is much less than half as toxic to rabbits as cocaine.

3. Cardiac depressant action is less marked, and even after still-stand has been produced, the heart may be recovered by electrical stimulation.

4. Complete anæsthesia is more quickly produced by tropsin, but is of shorter duration.

5. After instillation into the eye, a slight hyperæmia may be produced for a few moments, but no other signs of irritation and no ischæmia.

6. Mydriasis is inconstant and slight.

7. A toxic dose of tropsin produces, like cocaine, a marked rise of temperature.

8. Daily repetition of the dose causes marked diuresis, but urine is normal save for low specific gravity and pale color.

Practical tests on the human subject:

Professor Schirgger, of Berlin, after several months' experience with tropsin in eye-surgery reports that:

1. A three per cent solution produces complete corneal anæsthesia more rapidly than cocaine. Iridectomy could be done painlessly two minutes after putting three drops in the eye.

2. Anæsthesia lasts from three to six minutes for each instillation, and no further prolongation can be produced save by a fresh dose.

3. Mydriasis is absent, or but slight.

4. Ischæmia never occurs, but sometimes there is a passing slight hyperæmia, and a little smarting unless normal saline solution be used as a solvent.

5. No injurious symptoms were ever observed.

6. In removal of foreign bodies, tropsin seems, from its quicker action, far preferable to cocaine.

Dr. Silex, assistant in the polyclinic, has obtained similar results and has painlessly performed tenotomy within half a minute from applying a 3 per cent solution of tropsin." (*Ther. Gaz.*)

Unfortunately for the dental specialist, all of these experiments upon the human subject have been made by the local appli-

cation of the agent and not by its direct introduction into the circulation; and the manner of its application in the frogs and rabbits is not definitely stated. It is to be presumed, however, that in the two latter, hypodermatic injection was the method, and hence some comparisons can be drawn. We are all aware that direct local application of cocaine to the eye has been attended with few, if any, complications, and we shall await with interest further experimentation with this new agent when introduced by some other route for medication in the human subject. These facts, however, prove interesting in showing that it is a possibility of the near future of being placed in possession of an agent that may prove efficient without many of the drawbacks which have attached to our most general agent. Cocaine has so occupied the professional mind as the best local anæsthetic for the last few years, that other drugs possessing in a minor degree this important therapeutic action have, to a certain extent, been cast into the shade. The fact, however, is pertinent to all of you, that cocaine alone is not the ideal anæsthetic for average practitioners of dentistry to-day, and hence a substitute is greedily sought for, and in the absence of this substitute many combinations have been made and used, and almost every one of them has its advocates, promoters and defenders. This longing for an efficient, speedy and safe local anæsthetic has been the cause of many secret nostrums and preparations being promiscuously and boldly advertised and placed upon the market, and it is only necessary to refer you to recent papers and exposures in the *Cosmos* and other journals to attract your attention to the danger of such preparations and the villainous greed for name and money of some of their originators.

In the face of such a statement it is nevertheless true that there are some agents which may be combined to intensify the action of any single medicament as well as to correct some of their individual, poisonous results. For this purpose our literature is rich in formulæ tending toward this end. Cocaine has been combined with antiseptics and analgesics almost to an unlimited extent. First it was learned that an aqueous solution would soon be contaminated by fungi, decompositions and vegetable growths, and some preventive was sought for. For this purpose different agents have been used, such as alcohol, chloroform, salicylic acid, boric acid, phenic acid, etc. The latest agent that I have seen recommended for this purpose is acetanilid, the claim being made that it preserves the

solutions even when added in very minute doses, and, moreover, it is devoid of any noxious action upon the medicaments. Then some agent was sought for to intensify and prolong its anæsthetic properties—for this purpose phenic acid, choral hydrate, menthol, oil of cloves, camphor, antipyrine, etc., have been used. Then some corrective was searched for, and to this end the sulphate of atropia plays an important part as a cardiac respiratory and spinal stimulant, as also whisky, brandy, and aromatic spirits of ammonia taken before the administration. It is not, I feel, necessary to tire you at this time with formulæ or directions as to the special application of any given preparation. These you will find to your heart's content in the journals, and very neatly classified in Catching's Compendiums. I told you, I believe, in a previous paper that I was a stickler for the adaptation of the knowledge obtained from the general profession of medicine to the speciality of our choice. The object of this is two-fold: First, that our education may be sufficient unto the evils of our calling, and second, that in possessing such an education we will be carried above the dilemma's of the mere routinists. Hence, it seems to me we might gain some good solid information by studying for a while the conclusions that have been reached by writers in our general literature. They have met obstacles that we can avoid, they have been able to formulate a system of practice by which we may profit.

By a correspondence, numbering many letters, to the bright lights in general and special medicine, Prof. L. H. Adler, of Philadelphia, was enabled to collect and profit by the experiences of a host of competent men, the results of which led him to the following conclusions, which have received the approbation of the profession: 1st. *In minor surgery* cocaine is valuable in all operations, hypodermatically, in which the circulation can temporarily be arrested, and in which free bleeding can be encouraged, at the completion of the operation. Freshly prepared solutions *only* should be used, and they combined with some mild antiseptic, preferably boric acid. The syringe should be perfectly aseptic; a four per cent solution is of sufficient strength for hypodermatic use. Where the circulation *cannot* be controlled, *extreme caution* should be observed. In anal operations cocaine is of little value and when used must be employed with caution. The quantity of the medicament required to produce anæsthesia varies with the operation and its extent; as a rule, for ordinary minor operations from twenty-five

to forty minims of a four per cent solution are needed, and the length of time from three to ten minutes. Individual susceptibility to the toxic influence of cocaine is a complication of sufficiently frequent occurrence to make one use the drug with care and caution. The danger of the cocaine habit should not be forgotten. 2d. In genito-urinary surgery cocaine is to be used with more than ordinary care, as it is in this class of cases that the untoward effects of the drug have been most frequently noted. 3d. In gynaecological practice the drug has but a limited field of usefulness. As a rule in this class of cases, general anæsthesia is to be preferred, as the patient's knowledge of the exposure of her person is often quite sufficient to unnerve her and might be the means of frustrating the surgeon's work. 4th. In the field of ophthalmology the surgeon finds in cocaine the anæsthetic *par excellence*. In no other department of surgery do we find its use so widespread and its application so entirely satisfactory. In operations upon the ear, nose and throat cocaine is of great value as a local anæsthetic. Likewise Dr. Magitot has formulated the following rules which should govern the employment of cocaine as an anæsthetic:

1. The dose injected should be appropriate to the extent of the surface desired to render insensitive. It should not exceed in any case 1 to $1\frac{3}{4}$ grains.

2. It should not be administered in cases of heart disease, in chronic affections of the respiratory apparatus, or in nervous subjects.

3. It should be injected into the interior and not under the derm of the mucous membrane or skin.

4. The injections should always be given in a recumbent position, and the patient only be raised when the operation is to be performed upon the head and mouth, and then only after anæsthesia is complete.

5. The cocaine should be absolutely pure, its mixture with other alkalies forming highly poisonous compounds.

6. It should be injected in divided doses, with a few minutes' interval: "Fractional injection," renders it possible to guard against the production of sudden symptoms of poisoning.—(*Ther. Gazette.*)

A study of the foregoing will certainly make us more familiar with the symptomatology of cocaine toxicology, and consequently fortify us against the advancement of untoward symptoms. Es-

pecially is this of interest to us in our special department, as what has been said in regard to the genito-urinary field of surgery, may with equal force be applied to the mouth. Experience has shown that doses well borne by other regions cannot be tolerated in the mouth or urethra. It has also shown that in highly inflamed tissues little or no anæsthetic effect is produced, and my experience has been much more unsatisfactory with this agent in the lower jaw than in the upper. I am satisfied that many of the practical points will develop from the discussion, and hence I have purposely avoided many points that have occurred to me, and which also may possibly have suggested themselves to you. Such being the case I will await your discussion.

DENTISTS AS HOBBYISTS.*

BY M. R. HARNED, D. D. S., ROCKFORD, ILL.

My object in this paper is not to attack any one's hobby or hobbies especially, but to point out some of the common tendencies of dentists which detract from our usefulness, to ourselves, to our patients and to our profession.

I feel that there is a growing tendency among us to become cranks, or at least cranky, to get into ruts, or run to extremes. If this made us specialists it might not be criticised, but instead it simply makes us narrow-minded without benefiting any one.

We are inclined to think (especially if we are kept pretty busy) that our way is the only right way of doing a thing, and that in reality we are *the dentist* of this part of the country. We try to impress this upon our patients, not only this, but we even try to make each other think so, to such an extent that we can hardly take a pointer from another.

Our society, being for mutual aid, has a tendency to overcome this, and yet it may do no harm, and I hope good to point out some of our *faults*, that we may not overlook them entirely. In undertaking this I realize that it is much easier to criticise than to correct.

In our methods of attaining results we must necessarily vary according to circumstances. One man has lots of patients to fill in the short hours of the day, while another has lots of hours to fill

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in the "short of patients during the day." The one strives "to accommodate all and make as much as possible, while the other strives to be always busy, and make what he can."

So we are apt to vary in treatment of teeth. One man never finds it necessary to extract any tooth that is solid in the jaw. In many cases he treats and retreats the case until he finally perceives a slight improvement, or imagines he does, or he may possibly effect a partial cure, but at so great a sacrifice, in suffering and goes off to the general health of the patient, that the loss of the tooth would have been nothing in comparison, or he continues treatments until the patient becomes disgusted, worn out with suffering and retreats to some other man who has more sympathy or sense and who relieves him of the offending member. He goes away with a lighter heart, head and pocketbook, and says that "if these pesky scamps had less theory and more sense they'd make men happier."

The next dentist pulls everything that has ached. He goes on the principle of the army surgeon that "dead men tell no tales," and if the tooth is out the patient won't be coming back saying, "Doc. that tooth you filled is akin."

With regard to the matter of treating pulpless teeth men run to extremes similarly. One argues that there is no use of filling a dead tooth, and especially one that has abscessed, for "when the nerve is gone the life of the tooth is gone and it is only a foreign substance, and sooner or later will abscess and be thrown off similar to a sliver in soft parts." But it seems to me that when these men see teeth of this sort, and many of them, as they must, that have done good service for ten, twenty or thirty years, that they would think it at least worth trying. One of their determinations seems to be to forget these cases.

Likewise in treatment of pulps. The one saves everything (or tries to) on the principle that if the pulp is of any use (and had it not been it would not have been there) it should be saved. The other man kills every pulp that he can get near. The first *never* has *any* trouble with pulps that have been capped, the other has *nothing but trouble* with them; he never caps them now, and makes the statement, "that it is our duty to know beforehand if they will give trouble," on the principle that if there is a shadow of a doubt he kills the pulp and throws the responsibility upon the patient.

In the matter of filling teeth we find extremes again. One man says, have nothing but gold in the teeth if you want to save

them. They carry it to the extent that they sacrifice their health in building up monuments of folly in inaccessible places, their patients' nerves are shattered, their health injured and their teeth ruined. The dentist seems not to recognize the fact that a good amalgam filling is much better than a poor gold one, even though it doesn't fill professional pockets so rapidly.

Another extremist plasters cement and stuffs amalgam so indiscriminately that he disgraces a good servant.

Another great hobby, and this seems mostly confined to colleges and may have a good influence in making new practitioners careful, is the application of the rubber dam for minor operations, such as arsenical applications, small and accessible cavities, in fact, for everything, and one of the first questions asked students is, what is the first thing to be done in an operation; the invariable answer is, apply the rubber dam.

Gentlemen, is it not better to show the patient a little mercy, and not subject them to this gagging process in minor operations requiring but little time where the cavity can be kept perfectly dry and work properly done without it?

When we look at some of the monuments of our predecessors, who never saw a rubber dam, that have stood thirty to fifty years and preserved the teeth perfectly, we think it by no means always necessary.

In the use of anæsthetics we see the same crankiness exemplified. Here is the heroic man who never uses any anæsthetic, no necessity for it; all nonsense and too dangerous; but you will usually find that this individual don't want to stand any pain himself, and *wants* to take an anæsthetic when he gets a shave, or if he don't he kicks all the time at being hurt so. The next man uses any and every anæsthetic indiscriminately, not because of great sympathy for patients, but for the *revenue*.

Some hear of a new mode of applying a remedy or a new remedy, without giving it a trial condemn it as being bad or dangerous practice, while others jump at everything new and use it indiscriminately, finally condemn it because it won't do everything.

But of all the crankiness of dentists, of all the places where they "*know all about it*," there is nothing compares with the replacement of lost teeth or crowns. This one finds that the Logan crown is good enough for him and his patients, and he attains good results. The next will have nothing but gold or gold with

porcelain face. He tells you how rapidly a root gives out if it is not banded, how the cement washes out and the root decays and stinks; he says nothing of the many poorly fitting bands he has put into the mouth that irritate and aggravate the tissues about and cause an inflammation that elevates the root; he does not say a word about the many bands that were utterly useless and worse than that; but there is time enough yet.

In supplying lost teeth this one condemns the bridge as a scheme to rob the patient, and says that they do more harm than good; they are filthy things at best. He finds no use for them because plates are perfectly satisfactory to him and his patients; this man usually finds no necessity for more than one kind of plate, and that rubber or celluloid, only makes it in one form, and that usually suction.

But here is another man who clasps everything in the form of a plate, then he "knows where they are," for a little while at least, then the clasped teeth get sore, so it is almost impossible to wear the appliance, or they loosen up from continued aggravation of the gum, and others have to be attached, and so all are ruined.

Others find no use for anything but gum teeth; others still for nothing but plain teeth. With some there is nothing but a rubber plate, and others nothing but celluloid; still others who can see no good in any plate except one of metal, gold, aluminum, etc.

But here is the man who has no use for *plates*, except for full dentures. He bridges everything, attaching them to anything; "it is the only way to supply lost teeth." He cuts and slashes right and left. No tooth is too good to be cut off in the front of the mouth for a bridge attachment; "hardly any tooth is good enough to hold a filling, the best thing is to crown it."

He may turn in another direction and band everything. Here he meets with disaster, for in ninety-nine cases out of a hundred there are but two teeth in the mouth in natural form that can be successfully banded, the lateral and cuspid.

Others condemn the whole performance as bad, pernicious, etc., while others draw the line on a band of any kind, except in crowning, but having seen them do good service for ten years, I believe that in favorable cases, it is conservative and good practice to band a cuspid or lateral instead of cutting it off, for if the band

fails after several years' service, the root is not injured and can be utilized just as well, and will last just as long as if it had not been banded, and all will last much longer than if a plate had been worn in proximity to the teeth.

Another hobby of dentists is that we are all fine mechanics, more than that we are all inventors, and the "little schemes of our own are to be seen and heard of on every hand. It is "really wonderful what a lot of smart men we are, and yet how few discover it."

Now in this I am just as severe on myself as on anybody else, and deserve it just as much, perhaps more. My idea is not to hurt any one's feelings, but to act as a spur to glide us on to a better and broader understanding of things that we may practice more intelligently and conservatively, be more conscientious in our practice and in our statements to our patients, and to each other, thus the better fulfilling our mission in life.

PROFESSIONAL ETHICS—PRESIDENT'S ADDRESS.*

By E. J. PERRY, D. D. S., CHICAGO, ILL.

It may be truly said, I think, that the quality of dentistry rendered in a community can be determined by the attitude of the dentists in that community toward what we may term professional ethics. I therefore think it well for us to study the lessons taught by this question.

This society does not require its members to be governed by any code of ethics. Yet the founders of this association are ethical men, and no doubt expected eventually to see all who belong here join the State society and be subject to its code. It is not my intention, however, to raise the issue as to the value of a code to us as a society, or the propriety of our having one, but to make a statement of the fact of the value of ethical culture to us as individual dentists.

What is ethics?

Webster defines ethics as "The science of human duty." "The rules of practice in respect to a single class of human actions," etc.

Professional ethics, as applied to us, therefore, is the adaptation of these principles to our conduct as dentists. We are, then, considering the subject in this relation only.

*Read before the Northern Illinois Dental Society, October, 1892.

It may be observed in passing that it is difficult to see how a man can be professionally honorable and morally bad, or how a dishonest man can be an honest dentist. It is said of some politicians that they are corrupt politically but honest officially. You can believe it if you wish. I cannot.

Professional ethics cannot be written out. No set rules are necessary to govern the truly ethical gentleman. The rules may limit his misconduct, but like true politeness, it springs from his heart, and he rises higher than the written code. It is the character of the man. He is run by principles, not by rules. The subject, then, is not definable in words and can only be written of.

What ethics has done for our profession it has also done for the dentist. Ethics has transformed our calling from a mere mechanical trade to a noble and useful profession. With this development has come the progressive spirit and the professional brotherhood, more strongly marked in our calling than in any other. So the dignity and security of our profession can best be maintained by the fullest appreciation of the value of ethical culture.

When the hearts of our forefathers were opened, when this spirit struck them, their laboratories and operating rooms were opened also. These in the dark days of our history were locked up. Every man got what he could and kept what he got. We had no journals, no literature, no text-books, no colleges, no dental societies, absolutely no fraternity. Every man lived to himself; he grew jealous, selfish, narrow, ignorant and, of course, conceited. Sometimes he was a peculiar person, had certain mannerisms, and his peculiarities were as distinctive and marked as a quaker or cowboy. Now the father of all this sort of thing, in the last analysis, is selfishness and conceit. Ethics is the opposite of this. We cannot do without each other. With the organization of the first dental society up to the present time, our science has grown in usefulness to mankind and kept pace with evolution of our time. Our profession, besides its great usefulness, has been spoken of as the essentially polite profession. Politeness is synonymous with ethics, it attends civilization and exists only where it is. Ethics organized our dental societies, edits our journals, established our colleges, wrote our text-books, diffused knowledge, exchanged experiences, tabulated and formulated facts, and taught us the lesson of fraternity, until to-day we present to the world all the inherent qualities of a profession. And what the science of ethics has done

for our calling it has also done, even in a larger measure, for the dentist himself.

The professional man is possessed of technical learning which separates him from other business men and gives him the immense advantage over the laity of being the sole judge of the value of his services, he may do the wrong thing or the right, his patient cannot be the judge, then, at least, he may be well equipped in every way or not, he may avail himself of every means to be abreast with the latest and best thoughts, read dental literature, attend dental societies, etc., or he may not do his duty to his practice in these respects, his patients cannot judge of his competency, and because of the helplessness of the laity in these respects the professional man should be truly ethical.

Ethics teaches us to make things plain to our patients. An honest man don't quote Latin terms to impress a helpless, hapless victim. The ethical man carries a big lamp, it is light, not dark or mysterious about him. Science is common sense formulated. The priest or preacher who seeks to impress his hearers with mysteries is a quack or mountebank, he is himself ignorant and dishonest, a pretender.

Ethics teaches us to give freely our experience to our brother dentists. The principle which Hyppocrates put forth, that all knowledge of the healing art be freely given to all who sought it, is the basal one for us to-day.

This principle of giving to the profession what you may have found is right, and greatly enriches the giver. Give what you may to the profession, you are still enormously in debt.

The great bulk of all that you do know has been given to you on this very principle, besides you always get more back than you give away. Ethical culture takes away envy, jealousy; removes the scales from the eyes; gives away your secrets, and brings an enormous return. Love gets into hatred's place; praise sits in royal dignity where jealousy held sway, and the man grows, grows broader, and honors his calling and his community, and is steadily himself the greatest gainer.

The value of dental societies to us cannot be spoken of too highly.

It is a sad sight to see men grown gray in practice after having achieved a position of honor, suddenly drop by the wayside and let the great procession tramp over them in its onward march. You

are never too old to be benefited by associations, and if you drop them you will be taking a step to the rear, and the young and progressive man will cut you out, and ought to. There is not a dentist in the State, however high has been his position, or however humble his place in the profession, but what can contribute to, and receive great value from a dental society if he will but join and attend. He may not be able to measure up or write it down. He receives it unconsciously, if he catches the fraternal spirit. Let him strive to do this and I warrant you he will go to work on his studies. And ere long he won't worry about the restrictions of any code of ethics. The value of fraternity cannot be overstated hardly.

I always say when returning home from a dental meeting, that I will never miss another one. I love to grasp my brother dentist by the hand; I feel better and nobler after having greeted fraternally my brother dentists. I can truly say that some of my dearest friends are dentists, practicing not many blocks away from me. The fraternal feature is well pronounced in this society. I once belonged to a dental society in which there were but two dentists, myself and a neighboring dentist. We had clinics, papers and discussions, and there grew up between us a friendship which is warm to-day.

The deduction then is that the rectitude of purpose and fraternal spirit, made possible by ethical culture is the door through which comes all these benefits.

Let us make this meeting not only useful but fraternal, and hence more useful, that we may love to come ourselves and draw others into our ranks. And if we shall become ethical dentists we shall also become ethical men.

METHODS OLD AND NEW.*

BY G. W. DENNIS, M. D., LASALLE, ILL.

The practice of our calling is composed of petty details, and much of our success is based upon a close study of them. We enter our offices each morning, we excavate, we fill, we extirpate pulps, insert dentures, extract occasionally, and, while operations of each class bear a strong family resemblance, still there is, after all, a great variation. They are alike, and yet not alike.

* Read before the Northern Illinois Dental Society, October, 1892.

We cannot work by a pattern; each operation is dependent upon our skill and judgment, upon our ability to adapt ourselves to circumstances. The minor details of practice are constantly changing, methods that seemed perfection may, in a brief period, be swept away and their place be taken by ideas that seem the inspiration of genius; they, too, to be abandoned in course of time for something still more advanced, and so on *ad infinitum*. Thus it is that a study of these minor matters never becomes stale to those really interested in their work. In the course of a year the number of our different operations will become wonderfully numerous; in a decade, they are as the leaves of the forest.

For their durability, and for the comfort experienced by the patient, we are in a large measure responsible, therefore it behooves us that we be painstaking, and that we embrace every opportunity for advancement. "Ignorance of the law excuseth no man," and if our neighbor has a better plan than ourselves let us learn it. For such reasons should we assemble together in society meetings, subscribe liberally to the literature of the profession, and grasp every means of improvement, not forgetting to add our own mite, if opportunity offer. To the mind of the uninitiated, it is a very simple thing to fill a tooth or construct a plate, and it is to be feared that some dentists take the same view of the case. True it is *not* difficult to perform these operations after a fashion, but to attain a success that is as close to perfection as possible calls for all the energies of brain and body, not only of the individual, but of *all* who are willing to think and work in earnest; for he who is content to rest complacently in the ruts of by-gone methods, can never hope to attain more than limited success. We cannot safely follow the practice of fifty years back, as most operations of that period would be considered very much behind the age now.

However, there are a few notable exceptions—for instance, the suction plate for retaining full, and in some cases partial, dentures. We have no advance or improvement to report, and this would seem a better plan for replacing lost teeth than some of the more modern practices. Suppose an anterior tooth be lost, root included, and the adjoining teeth sound and in good general condition, what better can you do than to insert a well-fitting suction plate as small and thin as circumstances will allow? You surely would not grind down good sound teeth to cap for a bridge, or do worse and attach with bands, for of all the mistakes of

modern dentistry the band cemented upon sound teeth is apparently the greatest.

This process seems to have been accepted by but a small portion of the profession and to have been abandoned by most, even of these. Bridge work, in the hands of those really competent and having every facility, whose patients have abundant means, and where conditions in the case are favorable, is good practice, but as followed by the incompetent and avaricious, becomes a disgrace and reproach. Such malpractice should be frowned down.

A case that recently came under the observation of the writer will serve to illustrate.

The patient was a young lady of moderate means. She had lost the second bicuspid on the left and both bicuspids upon the right of the upper jaw. Two bridges had been inserted, that upon the left being composed of a misshapen, ill-fitting cap, with clumsy second bicuspid attached, the cap being placed upon the first bicuspid, which had been ground off as far as the patient's feelings would allow, and, as the teeth were very dense and sensitive, the cap had to be made very thin, and though worn but a few months, had a hole through the grinding surface. The bridge on the right had been fastened upon the first molar in a similar manner, and as two teeth were to be supported, he had placed a heavy band around the cuspid, ruthlessly cutting away between the cuspid and lateral incisor to gain the necessary room. Both bridges had come off in a few months, and all the poor girl had to show for her time, money and suffering was some worthless bits of mouth jewelry (which she carried in her pocket) and four badly mutilated teeth, at least two of them completely ruined. I have seen work nearly as bad from the hands of a college professor, who actually demonstrated bridge work at the college. Would a dentist be justified, in the operation just described, if he made a success of it, and would it be *possible* to make it a success without capping the cuspid on the right and the first molar on the left? Judging from my own observation and the reports of others, about one piece of bridge work in fifty is a success in *every* sense of the word. It is against the laws or *possibilities* of nature for one or two teeth to perform the duties or bear the strain intended for a much larger number. But the case is different where crown work is concerned.

The improvements made in the last few years make almost a certainty of this work, when properly performed. In gold cap

crowns the principal features are to obtain correct articulation and to see that a tight fit is made at the collar, the root should be beveled so that the higher the crown is forced, the closer the adaptation, care being taken that the collar does not extend so far beneath the gum as to cause irritation. But while the bicuspid are not apt to be conical in shape, the conditions are more trying with the six anterior teeth, and the difficulty of adapting a crown, at once artistic and durable, requires great skill and patience.

We have as yet no tool that will quickly and properly reduce the root, and the operator is obliged to use what ever he can best adapt to circumstances of the case in hand. Apparently many make no effort to reduce roots to a proper condition, and where this is omitted the results cannot fail to disappoint both patient and operator.

To attempt to adapt a collar, having parallel sides, to a root, conical in form, is unscientific, unsanitary and unphysiological.

If the band fits closely to the portion of the root having the greatest diameter, a V shaped space will be left to be a cache for debris, that may happen to be forced beneath the free edge of the gum, together with the exudates from the constantly irritated tissue, and it is only a matter of time when such an operation must fail.

For those not having the requisite time and patience to properly prepare the root, I will offer a substitute, which I have proved worthy by the test of time. It is also applicable to cases where the root is short or badly decayed, and, though perhaps not original, or new, will bear repetition. When a root decays, it does so from within outward, the cementum being a good protection. Now, if the outer third of the root is carefully cleansed down to the sound substance, or, if a sound root, if it be reamed out, and if, in either case it is then beveled off to the cementum, and a lining of strong amalgam is inserted, you will get both strength for the root, and protection from caries. A band within the root, strengthens as much as a band without.

The alloy must be quick setting, if the operation is to be finished at one sitting, and the opening for the admission of the post should be but little larger than the post itself, in fact an opening can be left through the amalgam and the post gradually forced up to form the channel, then after it is withdrawn and barbed it will

fit so closely that but little cement can be used, and another advantage is, that the crown being forced up while the amalgam is soft, the amalgam will conform to the shape of the cervical portion of the crown, thus making a very close joint, which will not allow of the disintegration of cement, at any very rapid rate.

This plan may not seem to be scientific enough for the minds of many, but it will succeed in probably more cases and for a longer time than any other method of setting porcelain crowns, except in these cases adapted for proper fitting of collars. The Logan crown was intended to be used in the foregoing description. With the exception of the porcelain faced Richmond crown, probably no stronger or more durable operation can be made than the Logan (with collar attachment), where circumstances are favorable. A convenient method of adjusting this work is as follows: Cut the root off squarely, a short distance (perhaps 1-32 of an inch) below the gum line and enlarge the canal to just receive the post, then grind the cervical end of the crown to fit the root, and secure alignment.

The crown should be larger at the neck than the end of the root. After grinding properly into place, proceed to level or smooth the sides of the root, and make a close fitting band, adjust the band and slightly oil it, mix oxyphosphate quite thick and place over the cervical end of the crown, and entering the post into the root canal push the crown up against the band, and withdraw carefully. You will now have an impress of the band in the oxyphosphate and after the cement hardens proceed to grind the crown smoothly down and slightly beveling, all around to the mark in the cement, then try it and if it needs more grinding it can be done, but it should go to place on first trial usually and make a very close fit, as the gold collar will stretch slightly. Then set with the cement, as it could not escape if mixed thick, and you will have a joint nearly or quite impervious to moisture and a fine support for both crown and root, practically one piece. A very important matter in porcelain crown setting is to have the channel for the post small enough, so that after *barbing* the post, it will be difficult to remove it, *without* the presence of cement.

Another very important matter in crown work, as also in the management of all kinds of pulpless teeth is the ability to properly treat conditions adverse to the welfare, of *such* teeth.

Old methods were to dose liberally with carbolic acid without reference to conditions, fill the root if at all, with gold or tin (and in many cases with cotton), consequently success was anything but assured. It is but a very few years since the most successful or modern methods has been generally adopted, and it needs to be introduced into a great many offices still. Almost daily, evidence is seen, of relics of barbarism, in the shape of badly filled root canals, or in many cases no filling at all. It was the fortune of the writer to operate for a lady, a few days since, whose mouth contained some very clever specimens of the operator's skill. Among the rest, were two dead teeth, one of which was giving slight trouble, the other, in an *active* state of eruption. The latter tooth, being opened into, revealed a cotton, root filling in the usual odorous state.

After the tooth was reduced to a condition of comfort and healthfulness the other tooth was attacked. This was an upper molar, the lingual root was about half full of gutta-percha (no chlora-percha being present), while the buccal roots were both entirely empty. Here was a man who had narrowly escaped success, his operative work being good, but for lack of a little knowledge and care he lost the confidence and patronage of a desirable patient, together with the annoyance of failure.

A dental journal printed *only four years since*, transcribes the controversy indulged in at an eastern dental society meeting, where a number of *representative* men were discussing the important matter of root fillings.

One stated that he was careful to remove all the *nerve*, but left the roots open; another advocated cotton, and still another thought cotton all right, but would add carbolated cosmoline. Not *one* spoke in favor of chloro-percha, and remember they were *representative* men, and this but four years ago. All cannot be expected to conform to one idea, nor to be successful with one material, but the merits of chloro-percha, followed by the core seem so great, the means so perfectly adapted to the end, that it appears strange that the whole profession is not, for once, united upon the point.

Very seldom indeed should a failure be recorded where proper sanitary precautions have been observed, followed by a filling with this admirable substance. In filling small and medium sized roots it is well to have two bottles of chloro-percha, one quite thin, so as to be forced to the end of the root easily; have the bottle as close to the work as possible, dip a small smooth broach in the

semiliquid and quickly carry to the canal, holding the instrument horizontally to prevent the chloro-percha from dropping, place in the canal, and pump as far and as rapidly as possible, repeating until the canal is flooded as far up as the broach will go, then place a piece of crude rubber over the orifice of the canal and press quickly and forcibly with a pumping motion for considerable time or until the material reaches the apex of the root, of which the patient will apprise you; then proceed in same manner with the thicker solution, finishing with the cone. But previous to this we should see that we have an aseptic condition in the premises, and that nothing remains of the pulp to mar our happiness in the future.

Remnants of nerve filaments left at the apex of the canal, whether by the "knocking out" process, or attempts at removal, with or by the aid of injections of cocaine or other obtundents, are more *threatening* to ultimate success than would be a septic condition, as the latter will be corrected before the filling is inserted, while the former is covered up and forgotten, to create trouble after a time.

The only *certain* manner of treating recently devitalized teeth, is to allow sufficient time for a *complete* removal of the entire nerve tissue, after which the canal should be thoroughly filled with an indestructible substance.

It is better to wait too long than to be too hasty, and I am of the opinion that, as a rule, from fourteen to twenty-one days are required for the devitalization and sloughing, necessary to the *perfect* removal of the contents of the canal, while often a much longer time should elapse in those cases where the pulp does not readily succumb to the action of arsenic.

In these cases a root dressing should be applied of a nature to partly counteract the effect of the decomposition of nerve tissue, a temporary filling inserted, with a definite time arranged for the return of the patient for examination.

It is not desirable to have a decomposed pulp for removal, and foul canal for disinfection, but even that is better than to pen up portions of the nerve tissue when the filling is inserted, as with our present facilities, putrescent pulp canals lose their terrors.

A few years since carbolic acid was the dependence of most dentists for such purposes. Practice has greatly changed and should the progressive practitioner be asked "what remedy (if you

were obliged to confine yourself to a single one) would you select," what would be the answer? Personally my choice would be peroxide of hydrogen.

If allowed *two* I would choose in addition to the above—oil cassia. In other words, I consider these two agents by far the *most nearly a specific* for *all* the varied conditions that are presented in the management of pulpless teeth.

The action of peroxide of hydrogen being both mechanical and therapeutic, it is of benefit not only in septic conditions, but is also a great aid in ridding cavities or canals of debris of more benign character, but which it is necessary to remove, while the oil cassia is efficacious both in early stages with inflamed conditions (which frequently yield with magical rapidity under its influence) and is one of the best antiseptics in existence.

The old method of noncohesive gold fillings, with hand pressure, has now fallen into disuse, but if the testimony of those familiar with the practice be accepted, it is a most reliable mode of preventing tooth decay. There is no doubt that a mixture of handpacking with the, oftentimes, heroic malleting of the present, would be judicious. Many operators pride themselves upon the fact that they use the mallet upon every portion of the filling, beginning with the first piece and only ceasing when the last particle is driven home; the patient has expired. In this matter much judgment is called for. The strain on the cavity walls, the danger to the cervical margin, and last but not least, the excessive strain upon the nervous system of delicate patients require that we should be as careful of the quantity and quality of our malleting as possible. Try it yourselves, fellow dentists, for an hour or two.

There seems to be a sentiment growing among the members of the profession in favor of mechanical mallets. It is difficult to obtain sufficient harmony between the minds of operator and the assistant (where one is employed) to insure satisfactory results in all cases; heavy blows are likely to fall where light ones are desired, and fractures or imperfect condensation may result. If the operator both guides the instrument, and handles his own mallet, he finds, in obscure cavities and awkward positions that he is at great disadvantage. While I am aware that many, probably a majority, of dentists use hand malleting, and I have used the same myself largely, yet I believe that it is not only the slowest and most awkward manner of accomplishing the purpose, but that the result-

ant operation is not so reliable. Probably the electric mallet is in all respects the most perfect, not only in excellence of work, but in speed as well. I believe that contour fillings should be made of cohesive foil, gold that is made and sent from the manufactory as cohesive. It has been frequently stated that noncohesive foil can be made just as cohesive as the other simply by annealing. It is said then to be just the same. If this is so why use noncohesive, for certain it is that many do prefer this form.

As a matter of fact, there is a very decided difference and one that, it seems to me, any dentist can realize by simply testing it with care and noting the matter in his mind. Noncohesive gold requires very much more annealing than the cohesive, and cannot be wrought into a dense, strong filling without receiving more malleting than is necessary with the cohesive, and is more liable to flake off, though for simple cavities is more desirable on account of its softness and consequent ease of adaptation to cavity walls, which qualities it retains to a marked degree even after considerable annealing.

In the line of combination fillings a few operators have of late reported favorably upon gold and amalgam. For frail teeth with cavities reaching very deeply beneath the gum, and especially where accompanied with an attenuation of the cavity that would render obscure operations doubly difficult, this combination works perfectly.

It has been called slovenly and is said to lead to careless habits. This is a mistake, as a slovenly man could never obtain favorable results, and if it tends to carelessness it follows that the operation must needs be very simple and easy. If this is the case why do many good operators acknowledge that they cannot make a success of it. There is really not so much difficulty about the work, after it is understood, but seems to be mysterious to some at first. While therapeutic conditions may conduce somewhat toward the splendid results that follow the intelligent practice of this method, it is more probable that the perfect joint made by confining a somewhat plastic material, with the matrix, and malleting the same into position, together with the absorption of the mercury by the gold, has much more effect.

Just a word about copper amalgam. My own experience has been somewhat at variance with that of some who have written upon the subject. I found no lack of edge strength, in the common

acceptation of the wood, but in many cases it crumbled or washed very badly, not only at the edges, but over the entire cavity. I one day found two fillings side by side in the same mouth, the conditions of which were not the same, one being very black and perfect, while the other was lighter colored and crumbling away. I became convinced that these results were not caused by certain conditions of the mouth, but by the mode of manipulation while preparing for insertion. I then made some experiments which have caused me to believe that certain fixed modes of preparing the filling will produce certain results, irrespective of oral conditions. Although I have almost ceased to use it on account of the color, still I believe it to be less black than it has been painted, and capable of doing good service in obscure corners.

Alloys and amalgams of various forms, have always met with opposition and disparagement, from a large percentage of the profession. This opposition arose partly from an advocacy of "nothing but gold" in some cases, and from ignorance of the proper manner of manipulating the material in others.

It was said (and the same is claimed to-day) that amalgam would shrink, would bulge, had no edge strength, wouldn't preserve teeth, etc. If the formula is a good one the manufacturer has done his duty, if we prepare the cavity *properly* and pack the material *solidly*, contour, and finish well, we will get good results. Amalgam has its place as well as gold, and the dentist who refuses to use it (under all circumstances whatsoever), does not do his patrons justice. In many cases even small cavities should be filled with the mallet, as small amalgam fillings are more subject to failure than are large ones. If, for any reason, you may find it necessary to insert a small or medium sized amalgam filling in (for instance) a posterior cavity in a superior cuspid, with the cavity coming through the lingual wall. (Filling in these cavities seem to be more liable to failure than are the average imperfect packing being the probable cause.)

Just slip a thin narrow strip of steel between the teeth, wedging it over against the cuspid. Cotton touched with sandarac will do for this purpose. Mix the amalgam with as little mercury as possible, press in a chamois skin, and inserting small pieces, one after the other, pack with the mallet until completed, and if you force in a small piece or two of Watt's crystal gold it will do no

harm; then if polished after hardening will be all the better, and keep a better color also.

Quite a number of excellent recipes have been formulated for capping exposed pulps. One of the best, for cases of full exposure, is, prepare the cavity as fully as possible without causing the patient excessive pain, and cap with arsenic. That probably is the best material for these extreme cases. Where a thin layer of softened dentine overlays the pulp, some operators line the cavity with a very thin mixture of oxyphosphate. So far as the ultimate result is concerned they had better have used the arsenic. The best plan (after the soft dentine is rendered antiseptic) probably, is to varnish the cavity and line with oxychloride or oxysulphate of zinc, which should be allowed ample time for hardening before inserting a filling upon it.

But these operations become very uncertain after the pulp has been the seat of pain and inflammation for any considerable time. Temporary work has become altogether too common; putrescent pulps beneath cement fillings are not conducive to a high standard of dentistry, although cement serves many useful purposes if rightly manipulated, and (could we devise means for the protection of fillings of this material, for a considerable length of time) it would doubtless be as lasting, and a better protection for cavities than any other filling material extant.

EMPLOYMENT OF THE POST IN ANCHORING FILLINGS.*

By C. J. UNDERWOOD, D. D. S., ELGIN, ILL.

I see the programme tells me I am to speak on employment of the post in anchoring fillings. If you were to judge the future by the past you might anticipate my paper to be a worse chestnut than it is, for they have had me on the list now three times for irregularities of the teeth, and the paper is still in embryo. But that is an error. It should be post. It may, however, not be amiss to remark that we may employ the post in anchoring fillings; in that we may profit by the mistakes of the past. At first I took it to be typographical error and felt some resentment, but when I come to copy my efforts from the original I concluded it was a scriptographed innominata, and that the compositor was entitled to a vote of thanks for mastering so much of it.

* Read before the Northern Illinois Dental Society, October, 1892.

In preparing this paper I have abjured books and journals, and anything and everything that may have been written on the subject, and endeavored to adhere closely to the actual details of the operation, just as I do the work in my practice.

I do this for two reasons: (1st.) If, happily, my practice embraces aught of value, some one may be benefited by it. And, (2d.) If my practice is faulty and unscientific, I may be benefited by your criticism.

I will consider but three cases, or three classes of cases:

(1st.) A proximal cavity involving the cutting edge in a devitalized incisor or cuspid.

(2d.) The same with a living and healthy pulp.

(3d.) An anterior proximal cavity in a devitalized bicuspids.

Case 1st. We find a large anterior proximal cavity in a devitalized central incisor, involving one-fourth the cutting edge.

After filling the root and cutting away frail margins we find the cone of the tooth gone and a thin plate of enamel in front, giving little promise of safe support for a large filling reaching, as it will, to the cutting edge. A post is indicated; not a screw or How post, but a triangular platinum wire post, always cemented in. And to obviate the annoyance and often disastrous consequences of the post being in the way, I bend it in such a way as to carry it well back into the cavity, down through the center of the tooth to a point near the cutting edge, where it curves outward to a point near the corner to be restored. The post is shaped before setting to an abrupt point, at the end toward the cutting edge, this being accomplished by flattening the wire at the end and then cutting off the corner at an angle of 44 to 60°.

The post is thus out of the way in the body of the filling, yet retaining its full size and strength to near the cutting edge, and here the taper is so short that the maximum amount of strength is secured, with the minimum amount of post. I then cut the usual groove at the base of the cavity, to prevent slipping of the filling; and a longitudinal groove to receive a part of the lateral strain.

The sample I have prepared is very nearly a typical case and I trust it will serve as a key to my awkward description.

CASE 2. Is the same sort of a cavity in a 'live' tooth.

There being no circumference to the cavity, but only a base, resort is had to the post—or pin or lug if you please.

I take a very small bur and drill a hole nearly through the tooth toward the distal side, and at right-angles with the long axis of the root, at a safe distance from the nerve and from the cutting edge. Then I enlarge with a slightly larger bur till it is as large as the thickness of the tooth would suggest or justify and cement a properly shaped pin in place, slightly bent at the point of emergence from the tooth, toward the corner to be restored, thereby affording a better grip for the gold, and also being more out of the way while building base of filling. A groove is also cut in base of this cavity as in case 1.

CASE 3. Is a large anterior proximal cavity in a bicuspid, a filling in the buccal portion of which will show, and should therefore be of gold.

An all-gold filling is contra-indicated both by size of cavity and extent of decay at cervix, and by the generally, attenuated condition of the patient's pocketbook.

I put in a compound filling, the lingual portion and body of the filling, amalgam and the buccal portion that shows subsequently, with gold.

I use a post here for two reasons—to secure greater certainty for retention, and to avoid bringing the amalgam in contact with the buccal wall of the cavity, thereby discoloring it.

The post is prepared as before—beveled sharply to a point from the point of emergence from the cement, and is placed near the center of the cavity, the point reaching the proximal surface of filling.

In cementing it in place, the cement is carried well into the buccal portion of the cavity, the lingual portion being left free for the reception of the amalgam. It will thus be seen that the post supplies the place of the buccal wall to the amalgam filling and the amalgam affords easy retention for the gold at the subsequent sitting.

The effect of an old-gold filling is thus secured at a great saving of time and trouble and in my judgment accomplishing a better result.

I think this covers all the uses of the post wherein would be likely to suggest anything new or instructive.

I wish to say before closing I never use a screw-post.

The threads weaken it.

It is no stronger at the point of emergence from the tooth than at the point. Besides, in screwing it to place you are liable to fracture the enamel.

TREATMENT OF THE DECIDUOUS TEETH.*

By L. E. GORDON, D. D. S., CHESTER, ILL.

There is nothing more worthy of attention by the dental profession than the subject of the preservation of the deciduous teeth. That we should go to the source of the trouble and try to understand the remote causes of decay in these temporary organs and thereby endeavor to institute means for the prevention of dental caries hardly any one will deny.

Many times a dentist is questioned by the better class of patients in regard to the care of the teeth; in such cases it is well to have at command a general idea of how this may be done and be able to explain satisfactorily something about it.

The growth of the jaws takes place in several ways in order to give room for the permanent teeth, one of its modes of growth is by a movement of the temporary crowns bodily forward toward the buccal or lingual surface "but not until the roots of the deciduous teeth have been more or less absorbed can this take place; then the alveolar wall above the crown of the deciduous tooth is wholly or partially reabsorbed and the crown moves toward the lingual or buccal surface also pushing the gum before it. When the teeth have attained the desired position the alveolar wall is again formed under the gum and thus an increase of transverse and antero-posterior diameter of the arch takes place. Very often the permanent teeth come through the gums presenting their buccal or lingual face instead of their cutting or grinding borders. When the temporary tooth was absent for a long period then the permanent tooth appears in the line of the temporary, representing the smaller arch, this tendency of the permanent teeth, under the condition of premature extraction of the deciduous ones, may be taken advantage of in those cases, where there is too much fullness of the dental arch, especially of its anterior portion."

It seems that I should say something in regard to its importance, for until it is conceded important by dentists themselves

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it will grow into importance very slowly in the minds of fathers and mothers. It is certainly true that the public has been educated up to the present point in dental matters by dental practitioners themselves, but on this particular subject a great deal of preaching is still necessary; for while a number of families among the well-to-do of our cities have their children's temporary teeth attended to, the greater mass (consisting of about nine-tenths) regard it as of no consequence, and the result is intense dental pain endured by children, loss of sleep, and waste of sympathy by parents, and last but not least, the loss of the aching organ, and a diseased stomach, caused by their not having the organs to masticate their food properly, which causes numerous affections. I wish that every parent was obliged by *natural law* to suffer all the pain endured by these little ones, resulting from decay of their deciduous teeth.

It is the duty of every parent to give by inheritance good, sound dentures to their children and enforce such hygienic and remedial measures as will preserve them until nature calls for their removal.

I will only mention briefly what these remedial measures should be: healthy parents, and the use of phosphates and lime salts, and after they are developed, frequent cleansing with a soft brush and the use of waxed thread drawn between them, as decay is mostly on proximal surfaces, to remove foreign substances from them.

These reasons I have given are sufficient for the preservation of the deciduous teeth. Now to find out the best way to do it, I shall give the results of my own experience and judgment.

That the presence of healthy deciduous teeth in the jaws until the natural development of the permanent set is necessary for the evolution of the jaws and teeth, I have no doubt; and that deciduous teeth may be extracted before the proper time and yet a good development of these organs take place in many instances, I also believe, but on the other hand I can see an arrest of development of the jaws, produced by premature extraction.

I never extract dead roots with or without crowns unless compelled by the parent or the impossibility to control the child, as it causes absorption of the alveolus, and a retarding of the eruption of the permanent teeth, and irregularity—but open them as you would an abscessed tooth and fill if allowed to keep them until the

proper time of eruption of the permanent; but there is great damage done by leaving full formed deciduous teeth in the jaws too long. If not extracted the permanent ones may not erupt.

If a child comes to me for the first time with teeth that need extracting, also those that need plugging, I perform the latter operation first, if possible; when I once get the confidence of a child by having performed painless operations, then it will not be destroyed by a painful one, if we do not deceive the child. There are children I cannot manage, and don't believe any one can, but they are few if the parents will not meddle. Give the child short sittings, say from fifteen to thirty minutes, according to their age and endurance. What time is lost in brevity must be made up by frequency.

I find that operations on children's teeth are not as successful as a rule as upon those of adults. One reason is the necessary imperfect manipulations, in many cases, to avoid all pain possible.

Children three years old and upward have been brought to me to have teeth extracted on account of toothache; I always save them if possible, rather than extract. To do this I find much patience is required. In the first place I get the confidence of the little ones, avoid any movement that gives it pain, I *never deceive them* and try not to fatigue them. I find it is not a desirable practice to have, (so far as money or comfort is concerned) nothing but a sense of duty urges me on; I do not intend to fatigue you with the process of evolution, but tell you what my present practice is, being as it is the result of my mistakes and successes by diverse methods.

Deciduous teeth are full of vitality; the microscopical organs composing them are active, and if the plug is not in contact with its walls reabsorption may take place and the pulp become irritated or exposed. It is well to remove superficial decay, especially on proximal surfaces.

Dr. Arthur's plan is to separate so as to be as self-cleansing as possible, but I don't believe in this, or anything of that heroic kind, as it lays bare the gum septum and causes food to push down on it, setting up inflammation, etc., which is as bad as toothache.

In some cases alveolar abscess may be cured—not by the heroic treatment of adults, but by merely cleansing the cavity with peroxide and alcohol as a disinfectant.

Filling the roots must be done as circumstances dictate, as the

roots "may be one-half absorbed" and filling of such roots will undoubtedly interfere with the growth of the permanent tooth and cause premature decay and absorption of the deciduous tooth, when not more than one year will probably elapse before these teeth will be replaced. If ulceration appears I open; if it still persists I extract.

The pulp when exposed may be destroyed in the usual manner, but its extirpation postponed for ten or twelve days so as to avoid pain, and even longer if it is necessary; saturate well with alcohol and cover with a loose cotton plug.

Care must be used not to wound the pulp mass or its horns, that occupy a large portion of the pulp chamber, for they are exposed in many crown cavities. When they are recently exposed at a small orifice I cap them with chloro-percha; this hardens quickly and a permanent plug can at once be inserted.

The thorough removal of decay must not be insisted on when accompanied with pain. Its removal is always desirable and should be done when it will not prevent the accomplishment of our object, but a half loaf is better than no bread at all, therefore there may be cases where but little of the decay can be removed. Saturation of the carious bone with alcohol will render it less liable to decay, and if the margins of the cavity are cut away until the healthy dentine is reached decay will proceed very slowly under a water-tight plug. This class I fill with cement.

There is a certain class of deciduous teeth found in the mouths of dyspeptic children, which are the hardest to preserve but seem to be the least sensitive. These teeth are seen to have rough, uneven enamel and cutting edges, with white spots in the teeth. It is well in these cases to advise parents (especially for girls) to change their food and give them a mouth-wash to use night and morning. I have found Pond's extract diluted with water equal parts to answer all purposes. Filling these teeth seems to do but little good unless strengthened by some means, as they soon decay and leave the mouth in a bad state and will surely injure the permanent teeth.

ULITIS.*

BY THOMAS L. GILMER, M. D., D. D. S., CHICAGO, ILL.

Ulitis is a term which may be made to cover a large number of pathological conditions, but is by no means definite, other than indicating the tissue involved.

The word is of Greek origin and means inflammation of the gums, and according to medical dictionaries has its synonym in gingivitis, which is from the Latin.

I think the two words, ulitis and gingivitis are very commonly used by the profession interchangeably. However, there seems to be a tendency on the part of some to make ulitis a general term, while gingivitis is used more especially to designate inflammation of that part of the gum which rests next to the teeth known as the free margins.

Histologically, gum tissue is composed of a dense layer of epithelial cells, resting upon a layer of connective tissue, in both of which is imbedded a rich supply of nutrient vessels. The relation of the gum to the teeth is that of contiguity; with the mucous membrane of the cheek, fauces, and of the peridental membrane, and periosteum, it is that of continuity.

Directly, other than through mechanical injuries, diseases of the teeth have no influence on the gums. But indirectly, through the medium of the peridental membrane, the gums are subject to serious inflammations. Indirectly also, the gums often participate in inflammation originating in the mucous membrane of the cheek and fauces bearing relation of continuity.

Anything interfering with the natural physiological action of the gums may cause ulitis; however, it is the experience of dentists who have given the subject attention that there is no tissue in the body which will, without remonstrance, bear rougher usage; indeed, a considerable amount of friction is essential to its health. It may be, that in times past when coarser food was used, the mastication of it supplied sufficient friction; but at the present time when most articles of diet are prepared for the table in the softest possible manner, friction by some artificial means is necessary.

Normal gum tissue is comparatively insensible to pain, even when pricked by sharp or prodded by dull instruments, but when

*Read before the Chicago Dental Society.

inflamed it takes on hyperæsthesia to an excessive degree. Owing to its rich supply of nerves and blood vessels, gum tissue, is rapidly repaired and, as before said, it tolerates abuses to a marked degree. This is the more surprising when we reflect that the mouth is one of the most favorable places for the multiplication and growth of microorganisms, making the opportunity for autoinfection so great.

Mycologists tell us that pathogenic as well as nonpathogenic organisms are present everywhere, and we know that unless antiseptic precautions are taken, breaks in the skin very frequently result in inflammation, while incisions or injuries of the gum generally heal with no indication of inflammation. Why this difference, when the gum is under more favorable circumstances for infection, has not been definitely settled.

It is thought by some that the saliva as it comes from the ducts has antiseptic qualities, rendering the poisonous products of the plants innocuous. Others believe that the cells of the mouth have by long-continued fights, acquired sufficient power of resistance to tolerate the presence of pathogenic organisms without prejudicial effect much as the general system eventually tolerates certain drugs in large doses, which at first would have caused death. Again it is thought by others that there is a constant fight going on in the mouth between the harmless and harmful varieties of microorganisms, largely in favor of the former. Miller quotes authorities who find but few pus-forming organisms in the mouth, which gives color to the belief that this last theory may be correct, at least to a certain degree. It is altogether probable that each theory contains a part of the truth, and that all combined more fully explain the question.

Inflammation of the gums may be expressions of disease affecting the whole system, such as syphilis, scorbutus, mercurialization or exanthemata, or from continuity of tissue as pericementitis, the so-called pyorrhœa alveolaris, osteitis tonsillitis, etc., or it may arise from traumatism from malignant and nonmalignant epuloid growths, or from aphthæ. Among the more common causes of ulitis, excepting perhaps that caused by pyorrhœa alveolaris and pericementitis, are accumulations of tartar, wedges for separating teeth, rubber dam, and appliances for its retention, temporary approximal fillings, poorly shaped interdental spaces either natural or caused by improperly shaped fillings, lac-

eration of gums while polishing fillings, the lodgment of insoluble particles between the gum and the necks of the teeth, such as parts of toothpicks, the inner shells of peanuts, insoluble dentifrices, polishing powders, by the eruption of third lower molars where there is lack of space, the careless use of arsenic, plates for artificial teeth, badly fitted crowns and unscientifically constructed bridges, and last but not least the lack of friction and of personal cleanliness.

I pass over without discussion several of the above named causes of ulitis because their treatment is either self-evident or because they are so seldom seen as to need but mere mention in a paper of this kind.

Whether aphthæ is a specific disease of the mucous membrane of the mouth and gums, or is an expression of a disease in some other organ or part of the body is a question. I incline to the belief that it is a disease of the mouth, caused by specific organisms. One reason for this conclusion is that it seemingly yields permanently to certain local antiseptic treatment, that is, to the use of the water of the oil of cassia. Aphthous ulcers rarely originate in the gum, but there is a class which is frequently found at the duplicature of the gum and the mucous membrane, the inflammation of which generally extends into the gum tissue. This class of aphthæ is too well known to need description. Formerly I used internal as well as local treatment for these ulcers, but at present depend wholly upon the water of the oil of cassia applied locally.

Another form of ulitis resembling aphthæ, but if aphthæ of wholly a different type, is described as follows: Patient presents with gums somewhat swollen, very red, exceedingly painful to touch, thick ropy saliva and foul breath. Upon closer examination the gums appear to be covered with minute ulcers or abrasions, and overlying the entire gum is a thin film of yellowish white substance having the appearance where it has accumulated more thickly, of being coagulated albumen, but under the microscope is found to be cast off epithelial cells, microörganisms and mucus. I have not seen an exact description of this condition, though have frequently met it clinically. I believe it to be a catarrhal inflammation of the gums. Usually it is only transitory, yielding readily to antiseptic treatment.

A good deal has been said lately regarding injuries done to the gums in the interproximate spaces, in consequence of unsci-

entifically shaped fillings, the use of wooden toothpicks, temporary fillings, etc. I am of the opinion that we may profitably continue the discussion of this phase of the subject. It is certainly not uncommon to have patients complain bitterly of extreme sensitiveness between certain teeth which have been filled, and upon examination we easily comprehend the cause. In a majority of cases the cause may be removed by sufficient separation by wedging of the teeth, and by the restoration of the contours. There are some cases which are not so easily cured, such as this for instance: two molars on the lower jaw, one of the teeth having been filled and imperfectly contoured; the other being only about two-thirds the length of the former, giving such shape to the space between the two as will permit the lodgment and retention of particles of food in it, making pressure upon the gum and causing inflammation.

Inflammation of the gums caused while polishing fillings, both by laceration of the tissue and by the leaving of insoluble particles between the teeth and gums is not uncommon. Besides the temporary injury resulting from the use of polishing strips, discs, files, etc., there is often serious permanent injury done by them in the destruction of the gum septum, which may result in depression in the gum between the teeth, affording opportunity for the lodgment of irritating substances which not only cause gingivitis, but injury to the peridental membrane as well. In order to remove insoluble substances left from polishing fillings, it is desirable to forcibly syringe the parts with warm water.

Gingivitis from badly fitting crowns and from unscientifically constructed bridges is yearly becoming more common. It is the exception rather than the rule to find a perfectly fitted crown. It is really a difficult task to perfectly fit bands to all roots. Had we always typical cases it would be different, but these are not the rule. It is probable that the future will show that this kind of work (imperfect crown and bridge work) will prove a fruitful cause of inflammation, not only of the gums, but of the peridental membrane. Usually in such cases the treatment indicated is the removal of the crown or bridge and the more perfect adaptation of it. Inflammation of the gum on the lingual side of the teeth in the mouths of persons who wear partial artificial dentures may sometimes be accounted for by lateral motion of the plates, the rough edges of the septum of the plates resting between the teeth, and the poor care ex-

exercised by the wearer. There is a form of ulitis which is very common and usually results from lack of care and lack of friction. The degree of inflammation varies from that exhibited by a slight reddening of the edges of the free margins of the gums to great venous congestion of the entire gingival border, which bleeds at the merest touch. There may or may not be accumulations of tartar, but always more or less of soft deposits about the necks and between the teeth; sometimes there is a bright line of granulation tissue at the margins of the gums and the breath is offensive. This condition of the gums is treated by thorough cleansing, by scarification of the festoons and by the application of a solution of the chloride of zinc. But in order to insure anything like a permanent cure the coöperation of the patient is necessary, as the teeth and gums must be thoroughly brushed at least twice a day. To do this I prescribe listerine and water of each 3iji and direct the patient to first thoroughly brush with water and then as thoroughly repeat the operation with the wash. By this means I secure a good deal of friction and very thorough cleansing.

Ulitis caused by the difficult eruption of the lower third molar is often very serious; it is not uncommon to see the inflammation so intense that the jaws are nearly closed by muscular induration, and, indeed, necrosis may follow. The pressure of the incoming tooth, or the insinuation of irritants between the gum and the incoming tooth, are primary causes which may be augmented by the striking of the upper surface of the gum by the opposing tooth. If the inflammation be great when the patient is first seen, it is well to make antiseptic and palliative applications and antiphlogistic treatment, at the same time giving the parts rest by slightly separating the upper from the lower teeth, using for this purpose phosphate of zinc on the cutting edges of the teeth. When there is a subsidence of the active conditions I remove either the gum over the tooth or the tooth itself, as the case indicates. Formerly I removed the gum by the use of curved scissors, latterly have employed with great satisfaction the electric cautery, forming the electrode into a shape so as to remove all the tissue I wish to cut away at one application of the cautery, using cocaine to lessen the pain. This method is easier for the operator, less painful to the patient and more satisfactory to both. I have left out of consideration much that properly belongs to the subject, lest the length of my paper should unduly try your patience.

HYPERTROPHY OF THE ORAL MUCOUS MEMBRANE.*

BY LOUIS OTTOFY, D. D. S., CHICAGO, ILL.

The mucous membrane of the oral cavity is subject to a number of affections; but these are principally confined to that portion of it known as the gingivæ or gums. The consideration of the affections of the gingivæ is not included in this paper.

The oral mucous membrane is continuous with the external covering of the body at the beginning of the alimentary canal; it can be traced, commencing at the lower lip, covering its internal surface; it is then reflected upon the external surface of the inferior maxillary bone; at the juncture of the bone and soft tissues it forms *several* folds, one opposite the center of the mouth, the frænum of the lower lip, and one on each side corresponding to the location of the second bicuspid tooth, which may properly be designated as the *inferior buccinator frænum*. Passing upward on the inferior maxillary bone the mucous membrane reaches the necks of the teeth, passes between them and around the last tooth on each side, it then continues down on the posterior surface of the bone, forming directly in the center, immediately behind the central incisors, a fold, the frænum linguæ; it then forms the floor of the mouth, is reflected upon the tongue, covering its base, sides, and dorsum, continuing back, it becomes the mucous membrane of the fauces, larynx, pharynx, etc. Beginning at the juncture of the upper lip with the skin, the mucous membrane lines the internal part of the lip, and at its juncture with the superior maxillary bone, forms *several* folds; one directly in the center of the mouth, above and in front of the central incisors, the frænum of the upper lip, and one on each side corresponding to the location of the second bicuspid tooth, the *superior buccinator frænum*; it then covers the external surface of the superior maxillary bone, passes between the teeth and behind the last tooth on each side, covers the palate, and in being reflected upon the muscles attached to the posterior part of the palatal processes of the superior maxillary bones, becomes the soft palate, it is then continuous with the lining membrane of the nostrils, the various sinuses, lachrymal ducts, Eustachian tubes, etc. Strictly speaking, the gum is that portion of the mucous membrane of the mouth, covering the hard tissues; that is, the maxillary bones. In no

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other part of the body do we find osseous structures covered by mucous membrane.

That portion of the mucous membrane known as the gum is most frequently subject to diseases; this, in some measure, is due to the fact that (1) this portion of the mucous membrane has a much lower vitality, and (2) that it is more frequently exposed to abrasion and injury by reason of its unyielding basis and its more ready contact with hard substances contained in food, and (3) also as a result of the deleterious effects of whatever abnormal conditions may exist about the teeth, the interdental spaces or cervical margins.

It is surprising that the delicate mucous membrane, which is so frequently exposed to dangerous influences and is the habitat of many species of countless numbers of microorganisms, is not more frequently the seat of disease. The diseases to which the mucous membranes of the mouth (the gums excepted) is liable are generally either of a local inflammatory nature, due to long-continued irritation, abrasion and eventual infection, or to constitutional disturbances. The inflammations are catarrhal, croupous, diphtheritic, ulcerative and gangrenous. While among other affections we have: Aphthæ, aphthous or follicular ulceration, cancrum oris, cellulitis, gummata, epithelioma, tubercular ulcers, mucous plaques, adhesions of the mucous membrane and the gums, scorbutic, gastric, syphilitic and mercurial stomatitis.

While hypertrophy of the gums, alveolar processes and maxillary bones has been noted with sufficient frequency to deserve record as pathological conditions, hypertrophy of those portions of the mucous membranes of the oral cavity, to which I am about to direct your attention, is not described in any pathological work.

It is a well-known physiological condition that the musculature of the lips and cheeks during mastication is constantly engaged in an effort to maintain the food on the masticating surfaces of the teeth; in order to accomplish this the muscles involved are continually contracting and relaxing, and thus forcing the food from the outer vestibule into the inner, where the tongue is making a similar effort to force the food into the outer vestibule; if these acts are uniform and constant the result naturally follows that the food must remain on the masticating surfaces of the teeth. If the teeth have been lost on one side of the mouth, the food which escapes on that side into the outer vestibule is forced into the inner

vestibule by the constant, energetic and forcible contractions of the buccinator muscle, when the presence of food is there recognized by the tongue it is placed onto the masticating surfaces of the teeth of the other side. If the teeth are absent on both sides the buccinator muscles of both sides, during mastication, are constantly contracting in order to prevent the food from escaping into the outer vestibule and to enable the tongue to gather the food and form the bolus. This constant excessive exercise of the musculature of the malæ is followed by the deposition of fat, an increase of the æreolar tissue and muscular fibers, resulting in a true hypertrophical condition of the cheeks and the mucous membrane.

All dental practitioners have observed more or less marked cases of this character. In two instances, now within my recollection, where the loss of all the teeth on one side, above and below, posterior to the cuspid, had been of some years' standing, the enlargement of the malar tissues was so marked that when the mouth was closed and the lips, cheeks and tongue were at rest, the malæ could be observed to have increased in size until the entire space formerly occupied by the teeth was filled with tissue which was even in contact with the tongue. In one of these cases the diameter of the normal cheek opposite the second molar was a fraction less than one-half an inch, while the diameter of the abnormal tissue had increased to $1\frac{1}{8}$ inches.

Some difficulties are always encountered in the substitution of artificial teeth in these cases, the constant effort of the buccinators to fill the spaces formerly occupied by teeth has resulted in the development of considerable muscular power, and this materially interferes with the retention of artificial dentures. As a general rule, the buccinator frænum is well marked and considerably developed; when this is the case, a corresponding depression in the substitute should be provided for. In one of the cases above referred to, it was impossible for several months to close the mouth without first raising the cheeks by means of the fingers or running the risk of lacerating the mucous membrane. Eventually, however, the hypertrophied mucous membrane receded, became reduced in extent, so that at the end of a year, if the dentures were removed and when all the soft tissues of the mouth were in repose, the space occupied by the artificial teeth could be plainly seen; that is, the mucous membrane did not at once relax into the space usually occupied by the artificial teeth. This hypertrophied condition is the cause of

many of the difficulties encountered in the retention of artificial teeth in old age, especially if the mouth has been in a "for rent" condition for many years. Hypertrophy of the mucous membrane is not so marked when all the teeth have been removed, as when only those of one side have been lost, and, as far as I am aware, the enlargement never extends beyond the filling up of the vacant space, or until the cheeks are in contact with the tongue, which obviates any further necessity for enlargement. Because of this self-limiting nature of the hypertrophy, no surgical interference is ever resorted to.

In connection with this subject I desire to relate a case identically the opposite to the condition just described—a case of atrophy of the mucous membrane and superior maxillary bones.

A lady, about forty years of age, had at various times teeth removed until she had lost all of the lower bicuspid and molars, and all of the upper incisors. This was the condition seven years ago. An upper plate having four incisors was inserted. The lower incisors and cuspids were the only teeth coming in contact with the upper denture; gradually they pressed the plate up, until some absorption had taken place, and at the same time, the lower six anterior teeth acted as a wedge passing between the upper cuspids and spreading the upper arch. As a natural consequence the plate became loosened, and the teeth were driven up; the lady then made a small roll of muslin which she placed above the artificial incisors, but as the same conditions existed the teeth were forced up still further, thus necessitating the addition of more muslin, until, at the present time, the size of the roll when moist is six-eighths of an inch in length and five-eighths of an inch in diameter. As a remedy lower and upper partial dentures were constructed. To prevent the upper plate from being too heavy, the rubber filling this space was made hollow, by packing the interior with cotton. The absorption of the osseous tissue was so extensive that the entire surface, where the underlying nerve trunk was almost exposed, is exquisitely sensitive. As the lower denture prevents the impingement of the lower anterior teeth on the upper plate, I believe that the process of absorption is arrested.

PROCEEDINGS OF SOCIETIES.

CHICAGO DENTAL SOCIETY.

Regular meeting, November 2, 1892, Dr. J. W. Wassall, President, in the chair.

Dr. Louis Ottofy read a paper entitled "Hypertrophy of the Mucous Membrane of the Mouth.

DR. C. S. CASE, (opening the discussion): *Mr. President and Gentlemen:* When I was asked about a week ago to open the discussion on this paper, I tried in every way I could to have Dr. Ottofy let me off because of the high-sounding title he has given to the paper. I do not know that I know anything about the subject. I heard a portion of the paper read to-day by Dr. Ottofy, but have had no time to think of the subject myself. Still there are two things in the paper that to me, so far as giving a definite name to them, are new, and that is relative to hypertrophy of the mucous membrane of the mouth so called by the essayist, and the name for the buccinator frænum. I believe that anatomists have not recognized the attachment or fold of the buccinator muscle sufficiently often to satisfy them to give that name or any name distinctly to it. Every dentist, of course, is aware that the buccinator muscle attaches to the superior and inferior maxilla so as to form a fold, but this does not always occur. Just before coming here to-night, while sitting with some gentlemen before we commenced to dine, I went around the party and examined four mouths with a view of ascertaining the relation of the fold which the essayist terms the "buccinator frænum" on the lower side. Of the four mouths I examined, one gentleman had a fold upon one side and none had it upon the other (lower). Another one of the party had no fold of the muscle on either side of the mouth, and another had quite a prominent distinct fold of the buccinator muscle upon one side only. The same was so with the fourth gentleman. All dentists have recognized this peculiarity of the buccinator muscle, sending out fasciculi of that muscle, producing quite a prominent attachment to the bone upon one side. I think it occurs more often on the upper side, and it is possible that a name should be given to it recognizing that fact which occurs so frequently. The practical part to us is that recognition should always be taken of this in constructing artificial dentures, especially on the

lower side. Wherever it occurs it is usually marked by the impression which is taken in plaster and will often leave a sufficient depression at that point to enable the dentist to mark it well enough so as to cut away sufficient of the plate in order that it will not recede on that account.

In regard to hypertrophy of the mucous membrane, dentists have all recognized that enlargement of the cheek or a tendency toward falling in of the mucous membrane of the cheek where teeth have been extracted, due to the muscular effort during mastication or from a general tendency of the tissue always to fill space in that way. Whether this is true of hypertrophy of the mucous membrane I cannot say, because I do not know; but the very fact that the tissues and the muscles tend to force themselves into this space, tend to drop toward the maxilla after it has become absorbed and occupy these spaces, makes it oftentimes quite a difficult thing to retain lower dentures in position if the muscles have been allowed to retain that place for any length of time. I think this is largely due to the fact that dentists do not shape the borders and the buccal and labial surfaces of the artificial dentures properly. We find in almost every instance in which artificial dentures are constructed, instead of taking the natural shape of the original gums, that they take or assume a shape that is entirely unnatural—a bulging out, if you please, of the surface of the plate, both anteriorly and along the border. If I may go to the blackboard, I would like to explain one particular feature which seems to me quite practical in regard to that.

Let us suppose that we make a transverse section of the jaw at the second molar of the lower side. The gum starts out there and forms a very distinct prominence or ridge, and then drops markedly in and back again similar to that (illustrating) along the buccal surface of the jaw. You can confirm that by putting it along the side of the lower jaw, you feel distinctly the permanent ridge dropping back on the anterior surface of the lower side. If I should make a transverse section of that I would find that the contour of the natural gums would be a decided depression at that point, and then starting in this (pointing to blackboard) direction. The muscles have been in the habit, if you please, of laying in over that depression both on the anterior side and along the buccal surface. But what is the shape of the plate that is constructed? A rubber plate. I think you will more often find

that the plate is shaped in this direction (illustrating) on the side than otherwise—at least, it has a rounded portion, and this portion is cut away in order not to rest upon the muscle in the position which you see. You take any lower denture and insert it into the mouth, if the muscles have been in the habit of dropping into that surface, instead of hitting the plate, the tendency of the muscles is to drop underneath the plate and lift it up; whereas if it had a depression at that point the muscles would fold in upon it and tend not only by their influence in holding it in position, but would produce an atmospheric force that tends always to hold a plate because the air does not extend beyond. Of course, this tendency of the muscles is increased by any force which might have produced a hypertrophied condition, as the essayist has maintained, under those circumstances.

Dr. T. L. Gilmer read a paper on "Ulitis."

DR. GEORGE J. DENNIS, (opening the discussion): *Mr. President:* In the first place, I desire to express my appreciation of both the papers, and in regard to ulitis, the subject upon which Dr. Gilmer has written, I must say that Dr. Gilmer has so thoroughly covered the subject that he has left very little for me to discuss. Ulitis, however, may be idiopathic or symptomatic. The line between the idiopathic and symptomatic forms is so obscure in many cases that it is difficult to pronounce them either the one or the other. For instance, the disease that Dr. Gilmer spoke of, aphthæ, is one that is very difficult to pronounce as being either idiopathic or symptomatic. We find inflammations of the gums are caused by mechanical means in many cases, and under this head we may class all inflammations arising from decay, that is, inflammation where we have an hypertrophy of the mucous membrane which extends into the cavity of the tooth before the operation of filling. The edge of a proximal cavity may be roughened, and that will produce such an irritation that in a short time a small tumor will be formed which will rise into the cavity and partially, if not entirely, fill it. Again, we have hypertrophies coming more under the head of Dr. Ottofy's paper, but yet in the form of inflammation which may be designated as ulitis, that is, an hypertrophy of the mucous membrane around the necks of the teeth caused by badly fitting dentures. In many cases partial dentures are constructed so that they do not come up close to the teeth. When such is the case we find that there is an elevation of the

mucous membrane usually more marked in the upper jaw, and find it passing down between the plate and the teeth, sometimes almost to the morsal of the teeth. The same thing very frequently occurs in the lower jaw, although not to the same extent as in the upper. In connection with crowns and bridges we find that wherever bands are placed around the teeth eventually there will be more or less inflammation. I prefer myself to place bands around teeth for crowns. The objections, however, made by Dr. Case to the use of bands around the necks of teeth are well taken. We very often do have irritation from a well-fitting band. In many cases the irritation of the gums is quite marked and the gums very painful. If we had any substitute for bands, or anything that would be better, I should certainly use it.

Other mechanical causes of inflammation of the gums are the use of wooden toothpicks, by which pieces may be broken off and remaining beneath the festoon of the gums cause intense inflammation. Other hard pieces of wood or peanut shells or materials of that kind are frequently found as well. In this connection I wish to speak of a case that occurred in my own mouth in which a wooden toothpick was used. I suffered with intense pain for two weeks with it. The toothpick was forced between the first molar and second bicuspid. I did not know it was there, except that the pain afterward became so intense that I supposed that death of one of the pulps in one of the teeth was the cause. After suffering two weeks the toothpick was found after taking out the fillings in the two teeth. It is needless to say that no dead pulp was found.

In regard to the saliva being an antiseptic and preventing the formation of septic diseases of the mouth, I cannot give my assent to that. I believe in the theory, however, that the tissues of the mouth have, by long-continued usage in fighting against different forces that we find in the mouth, become hardened in a great degree, and that they become in that way more capable of resisting injuries and inflammations. Furthermore, I believe in another theory, namely, that the constant irrigation of the mouth by the saliva is a greater influence in increasing the resistance of the gums to septic as well as other inflammations. We have in addition to those diseases that are thoroughly symptomatic, syphilitic, scorbutic and mercurial diseases, as well as affections caused by lead poisoning. Tonsilitis is another inflammation that is symptomatic

in a great degree. The inflammations arising from exanthematous diseases are also symptomatic.

In regard to badly fitting plates I may return to that. I wish to speak of the suction chambers we find in plates, they are a prolific cause of chronic inflammations of the mucous membrane of the mouth ; and I may add that rubber plates, in themselves, are also very prolific causes of inflammations of the mouth. These inflammations are seen constantly and need very little more than to be mentioned.

Interdental spaces have received so much attention at the hands of Dr. Black and others that I will not refer to this phase of the subject at the present time.

In addition to the inflammation mentioned by Drs. Gilmer and Ottoby, I find in looking over the literature of the subject an inflammation that is peculiar in many respects and is new to me, and it is a proliferating ulitis found in the mouth of pregnant women. We find tumors of a fibrocellular nature extending along the buccal surfaces of the gums, well formed at the fourth to the sixth month of pregnancy and present almost the appearance of cancer, till finally after the delivery of the child they disappear without any especial treatment in the second or fourth month after delivery.

There is another form of inflammation of the gums that I noticed in looking over the literature, which was given the name of stomatitis and pharyngitis and spoken of by Dr. Garretson. It occurred in a man forty years of age. For fifteen months there was gradual swelling of the glands of the throat, and an inflammation of the mucous membrane of the mouth and pharynx. There was flaccidity and hæmorrhage of the gums, swelling of the axillary and inguinal glands, also of the liver and spleen. No cause could be ascribed except overwork, both mental and physical. The throat was of special interest, for over its surface were spread numerous medullary elevations which had a smooth shiny appearance ; both tonsils were enlarged with the appearance of dense medullary knots. All secretions of the mouth and larynx were increased. Reaction was acid ; no previous disease of the mouth or throat. The attack of pharyngitis came on only after enlargement of the lymphatic glands of the neck, and with their increase or diminution the throat became worse or better. The peculiarity of this case was that under iron and quinine the patient recovered.

In another class of cases I have noticed the peculiar appear-

ance which has been noted by Dr. Gilmer, as occurring without any especial general disease. In my own cases the swelling and inflammation of the mucous membrane around the teeth with bleeding and intense pain oftentimes, not always, was associated in most cases with other diseases. For instance, I have noticed it in cases where there has been hip-joint disease or in rachitic patients. I have noticed it in patients who had had Pott's disease, and I have had it also called to my attention by physicians who are in active practice. The same condition is noted in typhoid fever and is one of the marked features of that disease.

DR. T. W. BROPHY: I was very much pleased with the papers and also with what has been said in the discussion. It seems to me the paper on "ulitis" should have been read first, as it very frequently precedes hypertrophy of the mucous membrane of the mouth. We have not had papers of this kind presented to the society for a number of years. I expected that in the discussion of the first paper Dr. Case would say something about the hypertrophies which very frequently result from the retention of temporary dentures too long. It is a fact well known to every observing dentist, that artificial temporary dentures that have been in use for six or eight months are a fruitful cause of hypertrophy of the mucous membrane—so much so that in some instances they lead to quite marked extension of growths upon the surfaces of the ridges. It has been my duty during the last few years to remove comparatively large sections of growths of hypertrophies of the gums which have come on slowly from temporary artificial dentures long beyond the time when they should have been replaced by better fitting ones. I say temporary artificial dentures. I think every set of artificial teeth is a temporary affair, no matter what it is made of and no matter how well it may be made. At the end of one or two years—five years at the longest—the natural order is for the alveolar ridges to atrophy as time goes on after the loss of the natural teeth, and atrophy permits the artificial denture to settle down or up, as the case may be, until the borders of the plate impinge upon the mucous surfaces at points where they should not. Often the result is hypertrophy of the mucous membrane, and where this ends nobody can foresee. So frequently does it happen that these irritations lead to abnormal developments of a malignant type, which terminate only in death.

The second paper, speaking of ulitis, or an inflammatory condi-

tion of the gum tissue, is to me an interesting one, and many of the causes of this inflammation of the gum tissue were given. The gentleman who opened the discussion (Dr. Dennis) on the paper enumerated a number of other causes; but he omitted speaking of an inflammation of the tissue which comes from the effects of phosphorus. We see little of that in this city, but in the East inflammation of the gums and affections of the maxillary bones, particularly the lower one, are very common. Whether this is due mainly to the inhalation of phosphorus and its action through the circulation or its local action has never been settled. Phosphorus has a special predilection for the lower jaw and gum tissue of that jaw. In acting upon these tissues it leads to the loss of teeth the same as from the poison of mercury, or ptyalism. This has been a purely pathological discussion this evening. There has been nothing said in regard to treatment except what was stated by the second paper as to local applications for the purpose of cleansing mucous surfaces, etc. I have one suggestion to offer in regard to the treatment of inflammation of the gums from any cause—namely, first to remove the cause of the disturbance, then resort to free blood-letting of the tissues, allowing the excess of blood to escape and thus permit the circulation to go on normally.

DR. L. L. DAVIS: There is one cause of inflammation of the gums that has not been mentioned by either of the essayists and which I think of just now because I have so recently read a paper on the subject. It is excessive tobacco smoking or chewing. It is not strictly an hypertrophy in cases of chewing, but more an atrophy.

DR. P. J. KESTER: I hold in my hand casts which I took last Saturday and which are the type of cases we are all meeting with. These casts show clearly the effects of trying to cleanse the teeth with a wooden toothpick. I have claimed for some time that the use of the wooden toothpick, perhaps more than anything else, has brought about an inflammatory condition of the gums which is very common. I refer now to an hypertrophy of the gum. It is not an hypertrophy of the gum proper, but rather an exostotic formation, an enlargement of the alveolar ridge itself, which I believe is due to the irritation of the periodontal membrane by the presence of insoluble substances. Of course, tartar will produce that condition. An accumulation of tartar about the necks of teeth will impinge upon the membrane sufficiently to produce

slight inflammation of the periosteum overlying the process which will proliferate bone tissue, and the use of the wooden toothpick has become so marked in my mind, that as at one time I felt I could distinguish a set of teeth that were cleansed with soap, so I have come to the conclusion I can tell a set of teeth in the mouth wherein the wooden toothpick has been habitually used. The cast which you see is a poor one, because I did not have nerve enough to take a plaster impression of the mouth, as the patient was a stranger. It shows, however, that the alveolar border is enlarged, and at one point of the bicuspid on the right side, it shows a granulated condition, which is not in the gum itself, but a projection from the alveolar process. The gum is thickened, and the interproximal spaces have been entirely destroyed. The septum between the gum is gone, and the opening between the teeth is perhaps one-eighth or one-quarter of an inch in some cases. This seems a very small matter. The wooden toothpick is so common that it is found everywhere, and is constantly being placed before us. Wooden toothpicks are simply of no benefit; you get particles of the wood between your teeth and if you get sufficient of them you have to take something to remove them. We ought to instruct our patients to the effect that there is a certain element of danger attending their use. It is not a cleanly thing to be chewing and picking out particles of mucous membrane, as it does not cleanse the teeth at all. What can be done with a jaw after it has gotten in this condition is for you to say. If the patient came to you at an early age you might treat the condition so that the gums would approach the normal.

DR. G. S. SALOMON : I do not know that I have very much to say on the subjects that have been brought before us this evening. There is one matter that has been overlooked altogether by both the essayists, and that is the modern way of most of the dentists of inserting crowns. I have reference to ready-made crowns and Logan crowns. I think there is nothing as poor for the dentist as a Logan crown. I think the space left between the crown and root causes more inflammation of the gum than anything else I know of. A poorly fitting band may cause inflammation and it does so, but the space which is filled up by cement and the cement afterward washed out gradually will cause more irritation than inflammation of the gum. Ulitis is one of the great dangers in dentistry, and I think our dental depots are to blame to a great

extent because they are offering such things to the dentist as will make him slovenly in his work. These dentists would be much better men if they did not have ready-made and Logan crowns to select from. If teeth were crowned properly and the bands fitted to the roots and students taught how to fit bands properly, we would have less ulitis than we have to-day. I think it is often a cause of hypertrophy of the gums as well. Dr. Dennis remarked that a cavity under the gums would cause hypertrophy of them, and I think the space between a Logan crown and the root of a tooth will cause the same condition.

There is one more phase of the subject that I desire to touch upon, which is often a cause of inflammation of the gum when we cannot assign a reason for it. I had a case not long ago in which I tried to retain a tooth in the mouth. I finally had to extract the tooth. The tooth was perfect in every respect, except the patient was suffering intense pain and inflammation of the inner portion of the gum. I extracted the tooth, and to my astonishment after the tooth was out I discovered that the tooth was pushed out at the end of the root and pushed up under the gum. Had I known what it was at the time I first saw the case I might have saved the tooth. So in this way we may lose teeth and not know where the trouble originated.

DR. C. F. HARTT: Dr. Gilmer spoke of friction in his paper. I have for a long time, although I do not know whether it is wise to do so, recommended my patients to chew gum—the old-fashioned spruce gum. I think that if there is any injurious effect that comes from chewing gum, it is from a loss of saliva. I believe the teeth of gum chewers are not as much decayed as the teeth of those who do not use it and their gums are harder and better.

Dr. Gilmer recommends the removal of badly fitting bands and crowns for the cure of inflammation. That frequently is necessary, but I am in the habit, when a patient comes to me with inflammation of the gums, of taking a sharp file, and filing down all the little inequalities I can find and burnishing the crown over again. Frequently it is all that is necessary.

DR. OTTOFY (closing the discussion): I wish to refer to two points not mentioned by those who discussed the subject. Notice the distinction I made between the "gums" and the "mucous membrane." In looking up the literature I have not found anywhere a statement of a conclusive way to determine where the "gum"

ends and where the "mucous membrane" begins. I make the distinction, that the "gums" extend as far as mucous membrane closely covers bony structures. Such tissue as the "gums" is not found anywhere else in mucous tracts.

The other point to which I wish to call your attention is, that some of you seem to have the impression that hypertrophy of the mucous membrane of the mouth is a pathological condition, which it is not. An hypertrophied condition of the mucous membrane and of the entire cheek may be perfectly physiological; hypertrophy means over nutrition; as for instance, after a full meal when the liver is active, it is in an hypertrophied condition, which is temporary.

If for any reason the vascular system is deranged and the heart is doing an extra amount of work, the muscular tissue of the heart is increased and we have an hypertrophied condition of the heart, not necessarily a pathological condition. The cheeks are normally overfed but not in a diseased state.

DR. BROPHY: If a part is hypertrophied, is it in an abnormal condition?

DR. OTTOFY: I would not say that this is an *unhealthy* condition. The fact that an organ has become enlarged, but is performing its function properly, may be pathological but is not necessarily an unhealthy condition.

I do not wish to convey the idea that when mucous membranes are hypertrophied, they are in a diseased condition.

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

EDITOR: A. W. HARLAN, M. D., D. D. S.

ASSOCIATE EDITORS:

LOUIS OTTOFY, D. D. S. C. N. JOHNSON, L. D. S., D. D. S.

THE DENTAL CONGRESS.

The Executive Committee of the Columbian Dental Congress having selected officers for this and other countries and filled nearly all of the committees provided for by the constitution and by-laws now appeals to the dental profession of the United States and foreign countries for a generous effort in the field of exhibition of new inventions and discoveries of any kind in the range of prothesis, operative dentistry, or in fact all departments of science and practice. It is hoped that no country will fail to send a representative to this congress to participate in the sessions as essayist, discussion, exhibitor or speaker on some subject in which he is especially interested.

Advance registration is especially desirable, as by that means we can more certainly tell how to provide accommodations for visitors and members. The local committee of arrangements, headed by the chairman, will assist in procuring rooms and board from the highest price to the lowest.

Do not have any hesitancy in telling the committee exactly what you want and how much you desire to pay, per day or week, as the city will be pretty well crowded nearly all the time during which the Exposition will remain open. August is the one month when the city of Chicago is least crowded by her own residents and there will be no difficulty about getting accommodations at that time. We hope that nothing will prevent the fullest attendance from the profession at home and abroad.

TO THE READERS OF THE DENTAL REVIEW.

In severing my connection as associate editor of this publication, I desire to express to the editor, the several past and present members of the editorial staff and publishers my sincere appreciation of their universal courtesy during the past six years. I regret that circumstances compel my resignation from the position which I have had the pleasure and privilege to occupy during the past six years. I also desire to bespeak for the DENTAL REVIEW unlimited success, and a continuation and extension of its sphere of usefulness. May the profession be more worthy and dentists better as a result of its existence. .

I trust the readers and contributors, will overlook my many errors during the past six years.

CHICAGO, November 15, 1892. .

LOUIS OTTOFY.

THE CONGRESS.

Now that the permanent officers have been elected for the coming Congress, and have settled down to work with a will, we may look for even greater advancement than that made in the past. They are taking up the work where the original committee left off, and in passing we wish to pay a high tribute to the members of that committee individually and collectively. Few men in the profession have the slightest conception of the immense amount of work accomplished by that body. The members sacrificed time, labor, energy, and money, to further the interests of the Congress, and they were men whose time was valuable, whose labor is never trivial, and whose energy could profitably have been expended for personal benefit.

The profession owes them its sincere thanks, and should give due credit to them for any success that may accompany the Congress, on account of the proper impulses they have infused into the project ever since its inception.

The officers have accepted a great responsibility in pledging themselves to carry out the plans of the Congress to a successful issue, and judging from the energy with which they are beginning, the profession need have little fear of the result.

In fact everything looks favorable for the most pronounced success. Every day adds new features and new enthusiasm, and

we do not believe that ever before in the history of dentistry has there been such a uniform sentiment in favor of any one project as exists in regard to this Congress. Not only are we in America enthusiastic over it, but foreign nations are fast catching the spirit of the idea, and are organizing with a view to an active participation. Foreign presidents have been appointed for every country having dental representation, and in nearly all cases acceptances have already been received. Foreign dental journals are endorsing it editorially and otherwise, and urging their readers to attend and take part in the proceedings. Dental societies in Paris and elsewhere have passed resolutions in its favor and are arranging to send delegates.

America must feel proud of the interest she is awakening in the professional ranks of all nations, and American dentistry will be placed on trial as it never has been before. The profession of other countries expect a great deal of us at this meeting and we must not disappoint them. The brightest minds from abroad will be with us and we must give them something of value to think about. We must not rely too much on the reputation of American dentistry to carry us through, for just at this point we wish to emphasize the fact that America has not altogether a monopoly of dental excellence. There are many progressive men in other countries who will put us to the blush unless we do something of unusual merit.

This will be no ordinary meeting and no ordinary preparation will suffice for it. Once more we appeal to our friends to leave nothing undone which will add in any measure to the ultimate success of this undertaking.

C. N. J.

PYORRHEA ALVEOLARIS.

Anything that will add to the resources of the dentist in arresting the flow of pus from the pockets around roots of teeth must be considered advantageous to the recipient and user as well.

For a period of ten months we have been using the following solution in the manner indicated: After the roots have been cleansed of all deposits (when present), the edges of the alveolar process have been scraped with small spoon excavators, breaking down the necrotic process as far as possible. Following this the

pockets have been syringed with H_2O_2 until the debris has been removed.

Now, take twelve minims of oil of cassia and add to sixteen ounces of distilled water. Agitate this from time to time for a few days at a temperature of $70^\circ F.$, or upward. Very soon the oil will be dissolved in the water.

To each ounce of the above add five minims of the officinal dilute sulphuric acid. Agitate this until thoroughly dissolved.

This solution is to be injected into the pockets carefully and slowly, having previously dried them as well as possible with paper cones.

The solution is astringent and stimulating and according to the latest experiments it is a bactericide of positive value. Should the teeth feel sensitive the mouth may be rinsed with lime water or soda water or any other alkaline fluid as weak ammonia water or soap water.

We have continued this treatment at intervals of four days for from four to five weeks with most excellent results.

In all cases where the teeth are very loose they must be made firm by wiring with pure gold wire or banding them with narrow gold or platinum bands cemented to the teeth.

When the acidity is too pronounced the treatment is alternated with a 2 per cent solution of zinc iodide in water. When there is much inflammation in the beginning of the treatment, washing the pockets with boroglycerine water one to ten for four or five days consecutively will be of advantage. When great pain is felt on account of the depth of the pockets inject one minim of vinum opii into each pocket when the pain will quickly subside. Holding hot water in the mouth from three to five minutes will also relieve pain.

CLOSE OF THE VOLUME.

The DENTAL REVIEW begs to announce that the sixth volume is finished with the current number. Our readers, we feel sure must appreciate the fact that the labor of editing a volume of a thousand pages yearly is no light task to assume in connection with daily practice and other duties to perform. We must leave to the appreciative or cursory reader the estimate of the value of such work, and on our part we promise that the year to come will

furnish the readers of this journal more and varied matter than it has been our lot to present before. If you have not renewed your subscription, now is the time to make up your mind, for 1893 will soon be with us.

MERRY CHRISTMAS AND A HAPPY NEW YEAR.

To one and all, at home and abroad, we extend the compliments of the season, and it is our hope that many readers of this journal will come to the WORLD'S COLUMBIAN DENTAL CONGRESS, 1893. All will have a hearty welcome and the best intellectual treat of the century will be offered them. Chicago will don her holiday attire for six months, from May 1st to November 1st, 1893. Come prepared to stay a month at least and you will not regret the time and expense. It will be education and recreation combined.

UNIVERSITY EXTENSION LECTURE COURSE.

An effort is being made to have a popular course of six lectures on some scientific subject, to be chosen by representatives from each of the dental societies of the city of Chicago. At present about one hundred tickets have been spoken for by dentists.

In order to pay all the expenses of the course, one hundred and sixty tickets will have to be sold. As this is strictly speaking a dental circle, we appeal to our readers in Cook county to take an interest in it, and make it a success at the outset. Any funds remaining in the hands of the committee will be devoted to a proper object—perhaps to the organization of another course at a later period. Will you join this movement? If so send a postal card to Dr. C. E. Bentley, corner State and Van Buren Streets, Chicago.

DOMESTIC CORRESPONDENCE.

DENTISTRY IN GUATEMALA.

LETTER FROM GEO. S. NASON, D. D. S., OMAHA, NEB.

To the Editor of the Dental Review.

DEAR SIR:—Guatemala or more properly speaking, Santiago de Guatemala, is the capital of a republic of the same name. It is a wonderfully interesting city and country but comparatively little

known to the average citizen of the United States. I was a resident of the city of Guatemala for nearly a year, actively engaged in the practice of dentistry, and became quite familiar with the country's conditions, its people and their customs and characteristics. The western coast is washed by the waters of the Pacific Ocean, while a small area of the eastern portion abuts on the gulf of Honduras, hence it enjoys a great versatility of climate with its hot zones, temperate regions, and at times, decidedly cool localities.

It was a Spanish colony until 1821, when it became an independent republic, and according to the census of 1880, contained 1,224,602 inhabitants. It is largely a mountainous country, but richly watered. On the western side of the Sierras the verdure is short and the streams, while very numerous, are consequently small and rapid, but on the eastern side a number of the rivers attain a very considerable development. There are a number of extensive lakes in Guatemala, and though some of the strata of the uplands are essentially metalliferous, there are but few mines of importance. There is some silver, lead, coal, marble, but not in sufficient quantities to create any stir in the commercial world.

The climate, excepting in the oozy lowlands along the coast, is considered preëminently healthful. The hottest months are April and May. In the summer (one month), the rainy season, the mornings almost invariably break with a clear sky, but always about midday the clouds begin to gather in great cumulous piles, and soon the lightning flashes, thunder roars, and rain pours down, forming rivers everywhere.

The fauna of Guatemala is closely allied to that of the tropics, and is almost devoid of animals man considers dangerous, the jaguar being the nearest to this. Mexican deer have a wide range, and there are tapirs, wild hogs and honey bears, rats, rabbits and hares. The country is rich in birds, from the king vulture down to humming birds of wondrous plumage. The buzzard (in Spanish so-pho-lo-te, as near as I can spell it) predominates, as they are protected by the government (the only thing that is), owing to their doing the *entire scavenger* work of the country. There are alligators in great variety, bats, salamanders, frogs, and toads.

The general character of the country induces a voluminous profusion of insect life—after having scratched and smacked for

a year, we hardly know which is most abundant the flea or mosquito. The city of Guatemala is the capital, and has about 60,000 inhabitants, and is well supplied with trambeas (street cars), electric lights, telephones, etc.

It is situated high above the sea in the midst of a fertile meseta and is quite healthy. It is surrounded almost completely by barreras or ravines. It has wide, regular streets with roomy suburbs like old Spanish-American towns. The houses, generally one-story, are permanently and comfortably constructed, many with commodious courts and gardens. The plaza mayor is what we would call the public square. It contains the venerable cathedral built in 1730, besides the Government buildings and public offices. There are a number of large churches, the La Mercy with its bleak image of the Virgin being revered greatly by the Indians. Santo Domingo is the oldest place of worship in the town. There are a number of educational and benevolent institutions, an excellent museum, theaters, Palaceo de Toros (for bull fights), and two fortresses.

The city's incredible prosperity has caused it to be dubbed, especially by visitors and speculators from the States, as the Paris of Central America. It has rail communication with the Pacific, but not with the Atlantic, Honduras or Mexico, yet drives a most thrifty trade with all. There are several cigar, cigarette, wool and cotton factories. The coffee export is the chief source of revenue, although they realize considerable from bananas, sugar, gutta-percha and hides.

As to the relative value of money, exchange fluctuating daily, week in and week out, I think 35 per cent would be about right, that is, between native silver and banknotes, Government money not being worth the paper it is written upon. During my residence in Guatemala the Government issued \$3,000,000 which at first was worth 100 cents on the dollar, but in less than two weeks it would not serve to pay custom duties, and a dollar would not buy a ten-cent postage stamp; in fact, the Government repudiated its own currency.

Dentistry is in a flourishing state, there being three American and several native dentists in the city.

A vast difference between prices and skill of the American *vs.* Guatemalaker dentist. For a full upper and lower on rubber the American receives \$100 (native money), while the native takes

whatever he can get *a la some* American dentists I know of. Gold and Richmond crowns, \$50 ; gold fillings, from \$5 up ; amalgam and cement, \$5 ; extracting (with pain), \$1 ; with cocaine, \$2.

REVIEWS AND ABSTRACTS.

MERCURIC CHLORIDE IN ALCOHOLIC SOLUTIONS.*

As dispenser to the Royal infirmary Mr. Johnson has to prepare large quantities of dilute aqueous solutions of mercuric chloride, and he sought a method of obtaining such solutions with the greatest expedition and accuracy. To weigh out and triturate the mercuric chloride becomes tedious when large quantities of such surgical solutions as 1 in 500, 1 in 1,000, 1 in 2,000, etc., are constantly in demand, and most dispensers keep, it is believed, stronger solutions on hand from which to prepare the more dilute.

The chloride is soluble enough in many media, such as glycerine, ether, absolute alcohol, rectified and methylated spirits, and sufficiently strong solutions are easily prepared from any of the above solvents for the purpose in hand. Such a solution in glycerine of the strength recommended in Martindale—viz., HgCl_2 2 parts, glycerine by weight 3 parts—is convenient, since 1 fluid drachm mixed with 4 pints of water equals a solution 1 in 1,000; but this solution, though apparently stable, is viscid and difficult to handle with accuracy and speed. A solution in ether, though apparently fairly stable, is liable to evaporate, thereby becoming of uncertain strength. Alcohol, either as absolute alcohol, rectified, or methylated spirit (280 grains in 4 fluid oz., of which 1 fluid drachm mixed with 1 pint of water equals 1 in 1,000) is the most convenient solvent and is used, it is believed, widely in hospitals and surgeries. Unfortunately, however, the spirituous solution is unstable. A reduction of the chloride takes place even while the solution is being effected, and though never of large amount—often, indeed, very insignificant—is sufficient to lead to inaccuracy. A large number of experiments with solutions of the strength named went to prove that the reduction of the mercuric chloride was influenced by several causes, such as (1) strength of the spirit employed, (2) kind and quality of the spirit, (3) exposure of the

* Abstract of paper read by J. R. Johnson at a meeting of the Liverpool Pharmaceutical Students' Society. From the *Chemist and Druggist*.

solution to light, (4) method of preparation, (5) length of time the solution was kept, etc. The amount of reduction was always indefinite and most uncertain.

The precipitate varied in appearance from flocculent thick masses to a finely crystalline and amorphous powder. In three similar solutions prepared at the same time and in the same manner, and allowed to stand for the same time (ten days), the reduction varied from 0.31 gramme to 0.18 gramme. The precipitate consisted for the most part of mercurous chloride, though organic compounds of mercurous also were present. The reduction was generally less in absolute alcohol than in rectified or methylated spirit. In the latter solvent the deposit was often colored and flocculent, and of considerable depth. Light greatly influenced the solution. Exposed to direct sunlight, the deposit formed comparatively rapidly and in considerable quantity. It was found that the less the light, the less the deposit. Solutions kept altogether in the dark were often almost free from reduction. Agitation and large bulk of the solution appeared to favor the decomposition, and the deposit was usually greater when the solution was prepared by trituration of the salt in the solvent than when the solution was effected by warmth. It was found that the presence of ammonium and other inorganic chlorides was of no use in preventing the reduction, and that the addition of such compounds as chloroform, chloral, etc., to the extent of 1 per cent only aided it.

After many fruitless experiments, free chlorine was passed through the solution for a short space of time with excellent results, with absolute alcohol, alcohol, methylated alcohol, or with 1 per cent CHCl_3 ; though the deposit varied in every case, complete re-solution of the deposit occurred at once when the chlorine was passed through. Each of the solutions had been prepared in a similar manner, and at the same time, and were of the strength already indicated.

The solution through which chlorine has been passed for five or ten minutes, or until very faintly colored, remains perfectly bright and stable. Under ordinary conditions of light and temperature, the solution keeps clear and unaltered for any length of time; but if exposed to direct sunlight, a very slight reduction occurs after some time. The chlorine is generated in abundance from two or three drachms of chlorinated lime, to which dilute HCl is added, and a simple piece of apparatus may be readily improvised and kept on hand for the purpose. Spirit so chlorinated keeps indefinitely and is of the greatest utility. A question, however, arose as to whether the minute amount of free chlorine present would in any way interfere with the germicidal powers of the aqueous solution made therefrom, and though at first sight it appeared to be unlikely that any such result would follow, the opinion of Sir Joseph Lister was asked. He wrote thus:

GLENELG, N. B., Sept. 24, 1892.

MY DEAR SIR: Your letter has been forwarded to me to this place. I have no hesitation in answering your question to the effect that the presence of the minute quantity of free chlorine cannot possibly interfere with the antiseptic action of the bichloride. If it had any effect at all, it would be to enhance the antiseptic efficacy. It might possibly make the solution act slightly more upon the steel of the instruments. I may remark that, as the result of recent investigations, I have for some months past abandoned the use of the bichloride in favor of our old friend carbolic acid. It has been shown that a 1 to 40 solution of carbolic acid is really superior in actual germicidal power for such organisms as cause inconvenience in surgery, as compared with any solution of bichloride that could be used for surgical purposes. * * * * *

Believe me, sincerely yours,

JOSEPH LISTER.

P. S.—For purifying instruments and sponges, and the skin of the part to be operated upon, a 1 to 20 solution of carbolic acid is, of course, used.

Although Sir Joseph Lister has abandoned the use of bichloride of mercury in favor of carbolic acid, the former is still largely used, though we may expect many to follow the example of the great surgeon in giving it up. There appears to be some uncertainty as to the effect of heat upon aqueous solutions of mercuric chloride. In "Martindale" there is a statement, concluding with a note of interrogation, that "heat reduces the salt to calomel." Mr. Rushton Parker, one of the honorary surgeons to the Royal infirmary, was anxious to be assured on this point, and as the result of many experiments, performed quantitatively, Mr. Johnson could not detect the slightest reduction of the chloride in such solutions as 1 in 500, 1 in 1,000, 1 in 2,000, etc., even after submitting to prolonged boiling.

Histology, Pathology, and Bacteriology. A Manual for Students and Practitioners. By Burnett S. Beach, M. D., Lecturer on Histology, Pathology, and Bacteriology, New York Polyclinic. Series edited by Bern B. Gallaudet M. D., Demonstrator of Anatomy, College of Physicians and Surgeons, New York, etc. Philadelphia, Lea Bros. & Co., Price, \$1.00.

This Booklet is indispensable to the student in dentistry no less than to the student in medicine, for whom it was specially prepared. The whole series is a most valuable adjunct in gaining a medical education. The old-fashioned way of toiling through voluminous works, for the essentials which were obscured by page after page of pedantic lucubrations has happily been displaced by this modern and sensible way. The subjects are presented in the best manner to be clearly understood and memorized. The language is direct, and the description concise. The matter is up to date, and the most authoritative writers only are drawn upon. There can be only praise for the author's ingeniousness in the condensation of so many points in his significant questions and pithy answers. The dental curriculum comprises all the subjects treated

and some of the chapters will have particular interest to dental students. The portion of the work devoted to bacteriology and the technique of cultivation, furnishes the busy practitioner a digest of the most recent advances in this important and ever interesting department of science.

BOOKS RECEIVED.

AN ARTIST IN CRIME. By R. Ottolengui, paper, price 50 cents. G. P. Putnam's Sons, New York, 1892.

A very pleasing story, well told and having an absorbing interest from the opening page to the close.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY, 1892. Louis Ottogy, Secretary, Chicago. Published by H. D. Justi & Son, 66 Madison street, Chicago, Ill. Pages, 198. Cloth.

TRANSACTIONS OF THE ALUMNI ASSOCIATION OF THE CHICAGO COLLEGE OF DENTAL SURGERY. Eighth annual meeting held in Chicago. ULYSSES G. POYER, D. D. S., Secretary.

Published by the Association.

PRACTICAL NOTES.

CASE REPORTED BY DR. W. F. GREEN, SO. EVANSTON, ILL.

Case. Miss W., aged 18, suffered from severe and continued headaches, for which she was being treated. Glasses had been fitted, with partial relief, and she was then referred to me for treatment of her teeth. Upon examination I found two bad pulp exposures—one in the right lower second molar, the other in the left upper second bicuspid, and a small one in the left upper second molar, which I have subsequently capped with gutta-percha and filled with cement.

Aug. 12. I applied a paste composed of the following :

- B. Arsenious acid C. P.
- Creosote (Wood) add q. s. ft. paste.
- (Sealed it in with cement.)

Aug. 13. Removed the paste, washed with ferri dialyzed, then applied glycerite of tannin and sealed it in with Gilbert's stopping.

Aug. 16. I applied the same kind of paste to the bicuspid and sealed in the same way.

Aug. 18. Removed the paste from the bicuspid and treated and sealed in the same way as the molar.

Aug. 20. I removed the pulp entire from the molar, washed with peroxide of hydrogen till reaction ceased, then dried and dressed canals with oil of cassia. At this time I could go but a very short distance from the pulp chamber into the canals without causing severe pain, yet the pulp was as large as any—that is normal in size.

Aug. 24. Removed the pulp entire from the bicuspid and treated it the same as the molar—in which I again changed the dressing, washing with peroxide and dressing canals as before. The molar at this sitting was very sensitive to pressure and the reaction from peroxide was excessive.

Aug. 29. I removed the dressing from both teeth, washed with peroxide of hydrogen, dried and redressed the bicuspid same as before. But in the molar I dressed canals which were very sensitive if I passed a certain point with carbolic acid 95 per cent. Response to pressure same as before.

Aug. 31. Removed dressing from bicuspid, washed with peroxide, dried and filled canal with chloro and gutta-percha. It remained slightly sensitive for a few days, when it gradually subsided, and the tooth now (Oct. 3) has a large contour gold filling, comprising the entire buccal half, and it is as useful as any tooth she has.

Sept. 2. Removed dressing from molar, washed with peroxide and redressed same as before. Sensitiveness increased and extraction was recommended, but patient would not consent.

Sept. 5. Removed dressing and treated same as before. The reaction from peroxide was excessive. Tooth extremely sensitive. Cocaine crystals were added to the root canal dressing. Extraction was again recommended and flatly refused.

Sept. 7. Suffering intensely. Patient completely worn out. Would not consent to gas, so I applied a 10 per cent cocaine solution of choral and camphor to the dried gums, waited five minutes and then removed the distal root (the crown crushing in), leaving the mesial root in situ, for the removal of which all pleading and arguments on the part of the lady's parents and myself failed, so she was given one-fourth grain morphia sulph. hypodermically and

ordered to bed—then late in the evening. The next morning patient felt better, but complained of numbness on right side of inf. max., extending from just in front of the angle along its lower border to the mesial line, thence up to the mucous membrane of the lip, thence back to the angle of the mouth and then in an irregular line to the point of commencement.

Patient suffered more or less pain in the socket and jaw till Sept. 13th, when I gave her gas and extracted the remaining root, after which she gradually recovered from the pain but the socket has failed to heal over or fill up. Several spiculæ of bone have been discharged from it having the appearance of necrosed bone.

At the time the numbness was first noticed it was complete there being no response to pricking with scalpel or pinching, and when blindfolded neither to heat or cold.

At this time Oct. 3d the numbness has decreased in area to the size of a silver dollar and involving the integument just over the external dental foramen and is as complete as at first. It has not decreased any in size within the past week. The gum looks normal and has just begun to throw out granulations.

She washes the socket with listerine in water two or three times daily.

Now in this tooth arsenic was in only twenty-four hours, when it was removed and the cavity washed with ferri dialyzed, and in the bicuspid it remained for forty-eight hours, with different results. The first a total failure, the second a success so far. Upon examining the distal root after extraction I found it very short and the canal as large at the apical foramen as at the pulp chamber.

The mesial one was normal, a little curved, with a large apical foramen.

Through these the arsenic must have passed, destroying the periodontal membrane and affecting the process also.

Did the arsenic affect some of the sensory fibers of the inf. dent. nerve? or did the cocaine solution of chloral and camphor? I think not, as there is no loss of sensation in the gums, mucous membrane of lips or cheek, or in any of the teeth of that side.

Will this complete loss of sensation be permanent?

SEPARATING TEETH.

Separating teeth for filling by "tying the cotton in" has been my practice so many years, that I had come to believe that it was in vogue with most of the dental profession, but frequent demonstration at society clinics and elsewhere seems to prove the contrary. The idea is simple, but very effective compared with the common use of cotton alone. It consists in placing waxed floss silk between the teeth before packing the cotton into the cavity, then drawing the two ends together and tying as in Figure 1.

Fig. 1.

For the bicuspsids and molars, a large white cotton string may be used in connection with a long roll of cotton, quite firmly twisted, packing the ends in at each side (Fig. 2), which, when tied, will form a cotton circle around the contact points of the two teeth, making it impossible, when properly adjusted, for it to move from its position.

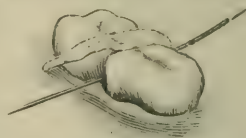


Fig. 2.

Practice and judgment will be necessary in order to gain the best results in all cases. The advantages of the method are: 1. The pressure is positive, moving the teeth in a short time with comparatively little soreness. 2. The danger of the compress slipping from its position and impinging on the gum septum is reduced to a minimum. 3. It causes the least pain and inconvenience to patients.

J. AUSTIN DUNN, D. D. S.

Chicago.

PECULIAR CONDITION OF THE MOUTH WHERE PLATES ARE WORN.*

BY DR. R. E. MERCKLEIN, MILWAUKEE, WISCONSIN.

There are cases where temporary plates are worn too long; in such cases the mouth becomes fungoid. I have seen cases where there were two to three folds of fungoid tissues underneath the upper lip; there was so to speak two or three false lips. Such a mouth is in a very bad condition to receive a plate thereafter, as it is very hard to reduce this fungoid or spongy condition to normal. There are other cases where temporary plates are worn one, two

*Read before the Wisconsin State Dental Society.

or three years and very little absorption of the ridge has taken place, the mouth being in a healthy condition. As soon as they get a permanent set in, from one to three months, so much absorption takes place that the plate is a great deal too large and ought to be made over to have it fit. There are also places where permanent plates are worn and for some reason or other they require to get a new set. The dentist taking the impression in plaster of Paris it being an accurate impression, he runs his model and finishes the plate. When he comes to adjust the plate he finds that the plate is too large. In such cases the mucous membrane is thickened or spongy, and from the impression of plaster, be it chemical or mechanical, I am not prepared to say, the mucous membrane from the time the impression is taken to the time the plate is inserted, is reduced to its normal or nearly normal condition, this being the reason why the plate does not fit when inserted; such is my observation. I think that the majority of failures of the cases last spoken of could be avoided by taking two impressions about a week apart and making the plate over the model from the last impression. I get very good results in the cases last spoken of in this way.

Two years ago, at the meeting at Appleton, a dentist stated that where a person wore an old rubber plate and it was replaced by an aluminum one. the aluminum plate would not fit. This is not only the case with aluminum but with all other kinds of plates where the mucous membrane is thickened or a spongy condition of the gums is present.

? ? ?

QUERY TO BE ANSWERED BY THE EDITOR.

If an upper second molar with putrescent pulp is presented, and you decide to treat and fill roots, how would you proceed in detail? The patient in good health, and mouth otherwise in good condition.

Answer. Apply the rubber dam and wash the crown with a saturated solution of sodium fluo-silicate. Open the pulp chamber with clean sterilized drills. Wash the pulp chamber with equal parts of proxide of hydrogen and 1-1000th solution of bi-

chloride of mercury. Do not attempt the removal of the putrescent pulp at this time. Apply two small pellets of cotton wet with myrtol and cassia equal parts ; introduce over these a piece of blotting paper wet with liquid vaseline and seal the cavity with soft gutta-percha. Make a perforation with a hot instrument through the gutta-percha, not producing pressure. If the tooth is elongated or protruding from the socket carefully counterirritate the gum with tincture of capsicum and chloroform equal parts.

At the end of four or five days it will be safe to remove the dressing under the strictest antiseptic precautions and remove the remains of the pulp from the roots. They are to be carefully freed from all animal matter, and washed with boro-glycerine water one in ten. Fill the roots loosely with shreds of cotton wet with myrtol alone, adding to it to correct the taste some oil of cloves or wintergreen. Seal the cavity carefully as before in the same manner. Leave the case for ten days when, in nearly every instance, the roots may be filled with safety to the patient.

The reason for perforating the gutta-percha plug is to be certain of the escape of any gas formed or to be formed and to insure against the error of producing pressure on the apical end of the root. In some cases it may do to remove the whole pulp at the first visit, but the safer plan is to sterilize the contents of the root and the root itself by the use of drugs before the attempt is made to remove it. If pus oozed out of the pulp chamber when it was opened the removal of it is indicated, but instruments should not be passed high up in the roots, at all events, during the first sitting.

Broaches should be scrupulously clean. The roots must be absolutely dry, using cold air instead of hot to effect this object. When ready to fill the roots, moisten their interior with eucalyptol, or cajuput. Then introduce chloro-percha, working it into the roots with a smooth broach; afterward take gutta-percha cones, cold, sticking a small pointed instrument into the large end and force them home. If the buccal roots are too fine to receive cones be careful to work all the chloro-percha possible into the roots and then force, with a blunt-ended instrument softened gutta-percha into the roots with a churning motion until you feel sure that they are well filled. If there is no good reason to the contrary, the crown cavity may be filled at once ; otherwise wait a few days.

ANSWER NO. 2.

Having adjusted the rubber dam, carefully remove all debris from pulp chamber. The pulp canals are cleansed with cotton shreds wrapped upon smooth broaches of proper size for easy insertion into the openings. This operation must be repeated time and time again until the cotton shreds show no traces of putrescent matter. The canals are now washed, first with chloroform then with alcohol to absorb all possible moisture, after which hot air is employed. Shreds of cotton saturated with myrtol are placed in each root and the opening sealed with gutta-percha to exclude moisture. In twenty-four hours remove myrtol and seal oil of cassia into the cavity as before, rubber dam always being used to prevent moisture from gaining access. This may remain in the pulp cavity for three or four days, when if all is "quietness and peace" the roots will be found nice and sweet and ready for the filling. If, however, any soreness should supervene, another application of the oil of cassia should be made and more time given.

Everything being in readiness for the filling, moisten the sides of the pulp canal walls with cajuput or eucalyptol to facilitate the passage of chloro-percha which is now pumped into the canals. Follow this with gutta-percha cones which have been previously fitted to the canals, soften the gutta-percha with heat, place in the pulp chamber a ball of soft rubber and by pressure upon the rubber with some blunt instrument force the chloro-percha up until the patient gives evidence of pain, when you may feel reasonably certain that those roots are filled.

Success depends fully as much upon the mechanical skill and conscientious, painstaking thoroughness with which these roots are cleansed and afterward filled as upon the therapeutic value of the medicaments employed.

This method of procedure will apply to any of the teeth as well as to the upper second molar.

A. W. McCANDLESS.

MEMORANDA.

Died at his home in Buffalo, New York, H. A. Birdsall, D. D. S., December 13, 1892.

We can offer a good position in China to an exceptionally good operator under thirty years of age.

Dr. Black's work on dental anatomy has commenced to appear as a serial in *le Progres Dentaire*, Paris.

Dr. George Edwin Hunt, of Indianapolis, has gone and got married to Miss Morrison, of Indianapolis. We extend our best wishes.

Dr. Norman W. Kingsley is the only dentist named so far on the list of the American Subcommittee for the Medical Congress at Rome, Italy, September 24th to October 1st, 1883.

The word comes from Paris that many are getting ready to come to America next year. English pocket dictionaries are the correct thing, fastened to a cane or umbrella. We are brushing up our French and German and are eating Malaga raisins (de California) tous les jours.

Dr. W. Jarvie, speaking at the banquet of the American Academy of Dental Science, said: "One thing I desire to impress upon you to-night is that there must be no division of interests next year. All should work to make the DENTAL CONGRESS a great success. For years we may not have another opportunity to show the progress of dentistry in America. This is our inning and we should make it count for all it is worth."

FOR INFLUENZA.

One-fourth grain protiodide of mercury pills, one twice daily after meals for two days, then three per day for a week—omitting a week and resume for two or three weeks.

If any redness of the gums is noticed, stop at once. This is, in some respects a new treatment for influenza.

LEAD IN TARTARIC AND CITRIC ACIDS.

Buchet has examined a number of commercial samples, and has found that fourteen of them contained combined lead, amounting to 0.0363 per cent, and metallic lead to the extent of 0.0071 per cent. The combined lead was probably in the state of sulphate and the metallic lead had been rubbed off the evaporating pans by stirring.—*Pharm. Zeitung*.

DANGER SIGNS.

There have been danger signals warning the public against the too common use of the coal tar preparations, known as antipyrine, phenacitine, acetanilid and antikamnia. They are being used not only by physicians in many nervous disorders, but very generally by sufferers without consultation. The drugs are ordered direct at the drug store, and taken at once in five and ten grain doses. They reduce the temperature of the body, and hence they temporarily relieve headache and fever, but the reduction in temperature is effected by the disorganization of the red corpuscles of the blood. This is one of the most deadly poisonous effects that can be cast into the system, and the continued results must be of a most serious nature. In influenza and grip they have been given on every side, and the patients knowing their names rush to the drug store upon the first symptoms of any cold or complaint that resembles the old attack. The truth is these drugs have only a limited use, and that is in severe cases of headache and very high fevers. Even then they should be given under advice, as they may seriously affect the heart otherwise. They should never be taken continuously or a worse trouble will follow when the blood is impaired by their use.

HYPERTROPHY OF THE MUCOUS MEMBRANE OF THE UPPER LIP.

The case I am about to describe is of interest, not only because examples of hypertrophy of the mucous membrane of the lips are by no means of common occurrence, but because it illustrates the tendency to recurrence of these tumors *in situ* after removal by operation, unless that procedure is efficiently carried out.

A. M.——, a male inmate of Broadmoor Asylum, drew my attention to the existence of a small pendulous growth arising from the inner surface of his upper lip, a little to the left of the frænum and extending in an outward direction for the space of about an inch. The growth was not noticeable when the lips were closed, but presented a somewhat unsightly appearance when the patient spoke or laughed. It had been slowly increasing in size, and latterly had become a source of annoyance to him during mastication. Previous to his admission here he tells me he had been troubled with a similar growth in the same situation, which he removed himself with a pair of scissors. A cure, however, was not effected, since, very soon after the wound had healed, the growth again began to make its appearance, and had now become troublesome in the respect I have mentioned. Recognizing the case to be one of hypertrophy of the mucous membrane, from the nodular and shotty character of the contents of the tumor, I decided upon removing it with the knife. This I did by means of an incision carried around the base of the tumor, taking care not to encroach upon the free margin of the lip. Having removed the superabundant tissue, I noticed several small yellowish-white bodies about the size of a split pea (the hypertrophied labial glands) scattered over the surface of the wound. These I removed carefully by means of a pair of dissecting forceps and then closed the wound with horsehair sutures. The wound healed by first intention, leaving no deformity, and although it is now some months since the operation, there is no sign of a recurrence of the growth. Mr. Bryant has shown that this hypertrophy is due to an overgrowth of the labial glands, and that unless these are all removed the growth is likely to recur. When my patient performed the operation on himself, several of the hypertrophied glands must have escaped removal, and I have no doubt it is to this fact that the recurrence of the growth *in situ* is to be attributed.—*The Lancet*.

DEATH AFTER AN ANÆSTHETIC.

Dr. C. Norman Hamper, Resident Medical Officer at the North-West London Hospital, forwards us the following notes of the case of a woman, aged forty, who died on the operating table on September 5th at that institution, after the administration of an anæsthetic. About 8 o'clock on the evening of September 5th, the woman was brought to the hospital in a collapsed, though conscious, condition. She was almost pulseless, so ether was injected hypodermically. On examining the right inguinal region an elongated, hard swelling was diagnosed, so I immediately sent for one of the visiting surgeons. Pending his arrival, I learned that on the 3d instant she had had a strain, and that she was taken ill almost immediately after. She had vomited ill-smelling (fæcal) matter from the Sunday. On the arrival of Mr. Brodie, one-sixth of a grain of morphine was injected, and, the husband having been interrogated, it was decided to operate. Ether, by means of Clover's apparatus, was at first tried, but, as it caused such violent coughing, it was discontinued, and chloroform (Duncan and Flockhart's) was substituted; but

after about five minutes, the patient being anæsthetised, the administration of ether was recommenced, and was continued for about twenty-five minutes, during which time ether had to be injected twice. At the conclusion of this period the operation, save the stitching of the wound and its dressing, was completed, her pulse and respirations became very weak, and she died fifteen minutes after the anæsthetic had been discontinued. Just before dying she articulated sounds and moved, which I think can be construed as returning consciousness. The verdict was understood to be "Death from misadventure," the jury regretting that the patient was not earlier subjected to treatment, but attaching no blame to the hospital. Dr. Thomas's attention was drawn to the fact that the patient did not die during administration of the anæsthetic.—*British Medical Journal*.

OBITUARY.

H. H. SILLIMAN, M. D., D. D. S.

We briefly referred to the sudden death of Dr. Silliman, in our issue of last month. The following biographical sketch is from one of the local papers of Chenoa:

Herbert Haynes Silliman was the eldest son of Col. and Mrs. E. C. Silliman and was born near Dunlap, Peoria county, July 5, 1868. He came to Chenoa with his parents in 1872 and has since been a resident of this city. He graduated from the public schools in this city and entered the office of Dr. Gallahue to prepare himself for dentistry. He then went to Chicago where he graduated from the Chicago College of Dental Surgery, class of '89, and also from Rush Medical College, class of '90. In April 1890 he began the practice of his profession in this city. He soon obtained a lucrative business and gave evidence of being a neat and skillful workman. March 1st, of the present year, he was married to Miss Florence Birdsel, of Prairieton, Ind., a most estimable young lady who has gained many friends since coming here. "Bert," as he was familiarly known, was considered more than ordinarily bright from his early boyhood and was a general favorite with his teachers and playmates at school. He has always been a leading factor among the young people of the city in social life and no gathering seemed complete without him. Pleasant, jovial, free-hearted, he was the most genial of companions and never wavered in his loyalty to a friend. He and his young wife were devoted to each other and their handsome home was almost a paradise to them. He was the soul of honor and integrity; all his dealings with his fellowman being conducted in a straightforward manner. In a business sense his future prospects were very bright and he bid fair to become noted in his profession.

He was junior deacon of Chenoa lodge No. 292, A. F. & A. M., member of Star of Bethlehem chapter 114, order of Eastern Star, Chenoa chapter No. 143, Royal Arch Masons, and of St. Paul commandery, Knights Templar of Fairbury. Though young in masonry he was very zealous in the cause and would have become one of its brightest lights.

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